



# Reproductive & Child Health

## Module for

### Medical Officer

### (Primary Health Centre)

### MO (PHC)

*Integrated Skill Development Training*



राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान  
National Institute of Health and Family Welfare

मुनीरका, नई दिल्ली- 110 067  
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आरोग्यम् मृतमसम्पदा

राष्ट्रीय स्वास्थ्य एवं परिवार कल्याण संस्थान  
**National Institute of Health & Family Welfare**  
मुनीरका, नई दिल्ली – 110 067  
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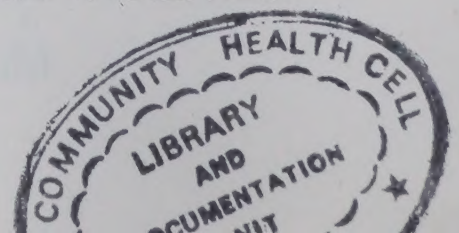
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## Preface

The need for and underlying principles of Reproductive health as an approach to solve the population issues were duly highlighted and agreed upon by participating countries during the International Conference on Population and Development held in Cairo in 1994. In agreement to this decision, the Government of India has formally launched the Reproductive and Child Health (RCH) programme on October 15, 1997. This programme has envisaged a major shift in certain components, approach and emphasis of the already existing Family Welfare Programme in the country. Major focus in this programme is delivery of need based, client centred, good quality, comprehensive reproductive and child health services to all the beneficiaries in an integrated manner. In India the RCH services are to be delivered through the existing primary health care infrastructure with necessary referral and supervisory support from the secondary and tertiary level institutions.

Capacity building among the personnel involved in the RCH service delivery through in-service training is considered as an essential prerequisite for the successful implementation of the programme. While various skills are to be acquired by the health personnel, major attention is being focussed on clinical skills along with communication and managerial skills. Accordingly, Integrated Skill Development training of primary health care personnel is being organized in which they are trained in these components in an integrated manner throughout the country.

The National Institute of Health and Family Welfare, which is the nodal agency for coordinating various training activities under RCH programme in the country, has developed this training module for enabling the Medical Officer of the Primary Health Centre (MO-PHC) in acquiring knowledge, skill and competency in different service components as well as to supervise the functioning of different categories of health workers viz. ANM, LHV, Health worker, Supervisor and Nurses. This module is expected to be a training resource material as well as a ready reference for MOs of PHC

The contents of the module are presented in 5 Blocks. The first Block on management deals with the basic principles of management and highlights the specific managerial responsibilities of the MO-PHC, like supervision of health worker in decentralized planning using Community Needs Assessment Approach; essentials of logistics and supplies management, as well as their role in supervision of maintenance of management information system at their functional level.



The Block on Communication covers the essentials of communication process including guidelines for Communication planning, as well as supervision of communication activities including Interpersonal communication and counselling as a major inputs in enabling behaviour change among people.

Block on Maternal Health has details regarding the conventional components of maternal health viz. ante-natal care, intra-natal care and post-natal care. In addition, it also deals with other important services like safe abortion, contraception, prevention and management of Reproductive Tract Infections (RTI), Sexually Transmitted Infections (STI) etc.

The Block on Child Health highlights essential aspects of newborn care to be understood by the Medical Officers of PHC linking the same with maternal health care. It also covers important interventions included under child health care; like immunization, ARI control, diarrhoeal diseases control, nutrition etc.

Realising the importance of adolescents' reproductive health a separate, though brief block has been included on this subject, which primarily sensitizes the MO-PHC to its importance and need for IEC in informing adequately and counselling the adolescents regarding their own health needs and precautions to be taken to safeguard their health.

This module is an outcome of efforts by NIHFW passing through various stages of reviews and refinements with the support of a number of experts from different professional settings. Their contributions are thankfully and profusely acknowledged. Efforts have been made to make this module as comprehensive and self-sufficient as possible for meeting the RCH training needs of the MO-PHC particularly based on the training guidelines evolved by GOI in 1996. Errors and omissions, if any, may be brought to the notice of NIHFW for corrections and modifications in the future editions.

*New Delhi*

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The National Institute of Health and Family Welfare gratefully acknowledges the effort and cooperation it has received from institutions and experts from different parts of the country in preparing the Module for the Medical Officers, Primary Health Centres. The module was written by the in-house faculty of NIHFV and the Training and Administrative staff of the RCH Project of NIHFV. The module was subsequently reviewed by a panel of experts and professionals from the respective fields during different stages of its preparation. These experts were drawn broadly from four areas viz. Management, Communication, Maternal Health and Child Health. The module presented here has been developed, based on their valuable advice, comments and suggestions.

It is one of those rare occasions that experts from different specialist areas like Communication and Management worked in close collaboration with maternal and child health experts to look at the reproductive and child health issues in the context of the actual work situation of a MO-PHC. Special thanks are also due to experts from different organizations who gave their valuable suggestions.

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## List of Abbreviations

<b>A</b>	AFP	Acute Falccid Paralysis
	AIDS	Acquired Immuno-Deficiency Syndrome
	ANC	Antenatal Care
	ANM	Auxiliary Nurse Midwife
	APH	Antepartum Haemorrhage
	ARI	Acute Respiratory Infection
	AWW	Anganwadi Workers
<b>B</b>	BBT	Basal Body Temperature
	BCG	Bacillus Calmette Guerin
	BP	Blood Pressure
<b>C</b>	CHC	Community Health Centre
	CHF	Congestive Heart Failure
	CuT	Copper T
<b>D</b>	DDC	Drug Distribution Centre
	DDK	Disposable Delivery Kit
	DPT	Diphtheria, Pertussis, Tetanus
<b>E</b>	EDD	Expected Date of Delivery
<b>F</b>	FA	Folic Acid
	FRU	First Referral Unit
	FTD	Fever Treatment Depot
<b>H</b>	H.Mole	Hydatidiform Mole
	H/O	History of
	HAF	Home Available Fluid
	Hb	Haemoglobin
	Hg	Mercury
	HIV	Human Immunodeficiency Virus
	HLD	High Level Disinfectant
	HPV	Human Papilloma Virus
	HW (F)	Health Worker Female



<b>I</b>	I/M	Intramuscular
	I/V	Intravenous
	ID	Intra Dermal
	IFA	Iron and Folic Acid
	ILRs	Ice Lined Refrigerators
	IP	Infection Prevention
	IUD	Intrauterine Device
	IUGR	Intrauterine Growth Retardation

<b>L</b>	LA	Lactational Amenorrhoea
	LMP	Last Menstrual Period
	LSCS	Lower Segment Caesarean Section

<b>M</b>	MLV	Malaria Link Volunteer
	MO	Medical Officer
	MR Syringe	Menstrual Regulation Syringe
	MTP	Medical Termination of Pregnancy

<b>N</b>	NGOs	Non-Governmental Organizations
	NMEP	National Malaria Eradication Programme
	NNT	Neonatal Tetanus
	NSV	No-Scalpel Vasectomy

<b>O</b>	OC	Oral Contraceptives
	OPV	Oral Polio Vaccine
	ORS	Oral Rehydration Salt

<b>P</b>	P/A	Per Abdomen
	P/V	Per Vaginum
	PHC	Primary Health Centre
	PIH	Pregnancy Induced Hypertension
	PPH	Post Partum Haemorrhage
	PROM	Premature Rupture of Membranes

<b>R</b>	RCH	Reproductive and Child Health
	RTI	Reproductive Tract Infections

<b>S</b>	SC	Sub Cutaneous
	SD	Single Dose
	STD	Sexually Transmitted Disease
	STI	Sexually Transmitted Infection
<b>T</b>	TT	Tetanus Toxoid
<b>U</b>	USG	Ultra Sonography
	UTI	Urinary Tract Infection
<b>V</b>	VDRL	Venereal Disease Research Laboratory
	VVM	Vaccine Vial Monitor







## Introduction

The rapidly growing population had been a major concern for health planners and administrators in India since independence. The result was the launching of the National Family Planning Programme by the Government of India. India is the first country to have taken up the family planning programme at the national level.

Poor health status of women and children in terms of high mortality and morbidity was also another health priority in this country. Health facilities like hospitals and health centres were established for providing Maternal and Child Health (MCH) care through ante-natal, intra-natal and post-natal services. In addition, a number of special programmes and schemes like immunization against vaccine preventable diseases, nutritional interventions like iron and folic acid distribution and vitamin A supplementation, diarrhoeal disease control through Oral Rehydration Therapy (ORT), Acute Respiratory Infection (ARI) control programme etc. were implemented over the past. In order to ensure maximum benefit from these programmes and to provide services in an integrated manner to this vulnerable group, the Child Survival and Safe Motherhood (CSSM) programme was implemented in India since 1992.

Despite all these efforts, the desired impact on the population growth and health and development of women and children in the country could not be achieved and the need for a new approach to the problem was felt. In 1994, during the International Conference on Population and Development (ICPD), held in Cairo it was recommended that a new approach needs to be adopted to tackle the problem. Under this approach it was decided that family planning services should be provided as a component of the comprehensive reproductive health care. Reproductive health approach implies that men and women be well informed about and have access to safe and effective contraceptive methods as well as women can go through pregnancy and child birth safely and that couples are provided with best chance of having a healthy infant.

Being one of the 180 countries, which participated in the ICPD conference, India also agreed to the decision taken during the conference to adopt the reproductive health approach to the population issues. Accordingly, as a follow-up action to this conference, the Government of India launched the Reproductive and Child Health (RCH) programme in October, 1997.

With the new approach under the programme, it is expected that health personnel including you as a Medical Officer of Primary Health Centre will be able to understand more easily and completely the service needs of the population and



deliver services accordingly. The RCH programme is envisaged to provide an integrated package of services, which will include the following:

- Services for mothers during pregnancy, child birth and post-natal period including safe abortion services when required,
- Services for children including newborn care, immunization, Vitamin A prophylaxis, Oral Rehydration Therapy (ORT) for diarrhoea, management of Acute Respiratory Infections (ARI), anaemia control etc.,
- Services for eligible couples through promotion of use of contraceptive methods as well as infertility services when required,
- Prevention and management of Reproductive Tract Infections (RTIs), and
- Adolescent health services including counselling on family life and reproductive health.

For rendering the above services the new approach under the RCH programme places special emphasis on **client-oriented, need-based, high quality, integrated services** to the beneficiaries. There has been a major shift/change in the approach from the past and some important ones among these are:

### **1. Target Free Programme Based on Community Needs**

In the past the workload was estimated by the health functionaries based on the centrally determined contraceptive method-specific targets. Under the RCH programme, this method is withdrawn and in its place you yourself can estimate your workload by using **Community Need Assessment Based Approach (CNAAB)**. Since 1996, the Government of India has started the implementation of this approach.

### **2. Participatory Planning**

The estimation of services required and its planning are to be actually undertaken by the health workers under your guidance with active involvement and consultation with community members including women's groups, panchayat institutions/members, etc.

### **3. Greater Emphasis on Quality of Care and Client Satisfaction**

Under the RCH programme, special emphasis is placed on good quality of care. Therefore, you have to ensure that all services provided by you and other health functionaries are of good quality and acceptable to the clients. This can be achieved by ensuring adoption/practice of technically correct procedures by health personnel including you while rendering various services. It also requires better interpersonal relationship between clients and service providers informing them about causes and seriousness of their health problems and types of services

currently available and their sources. You have to also provide counselling services wherever needed so that the clients are enabled to take correct decision for accepting services. This, in turn, is expected to increase satisfaction with the services received among clients and thereby further increase the acceptance of services.

Well trained and highly motivated health personnel are essential pre-requisite for successful implementation of this programme which deals with highly sensitive and personal aspects of life like contraception, abortions, maternal and child health services etc. In order to provide RCH services under the changed approach described above, service providers including you should have a desirable degree of technical competence and in addition skills in effective communication as well as managerial capabilities. Therefore in-service training of all personnel is an essential intervention for success of this new approach to the programme by sensitizing them to the new approach as well as developing skills through hands-on-training.

You would appreciate that in providing the RCH services to the appropriate needy clients as an integral component of primary health care, you have a major role to play. In order to enable you to perform your role most effectively, you need to be exposed to the refresher/in-service training in a systematic manner. Under the RCH programme, this is being undertaken through RCH Awareness Generation Training (AGT) programme as well as through Integrated Skill Development Training programme being conducted by identified training institutions.

Through the Awareness Generation Training, at the grassroot level all field functionaries not only from the Department of Health and Family Welfare, but also from various other development sectors like education, rural development, women and child development as well as community leaders, members of Mahila Swasthya Sangh and Panchayat members are sensitized to the various aspects of RCH programme.

The Integrated Skill Development Training of varying duration is provided for all categories of health personnel including doctors, nurses and paramedical workers at the Primary Health Centres. For you, this training will be of 12 working days duration. During this training, you will be given in-depth orientation about conceptual/theoretical details about the RCH programme. This training will also include practical hands-on-training on all important components of RCH programme so as to improve your clinical skills. In addition to the required clinical skills, this training also provides you in an integrated manner, insight into the communication and managerial skills required for you to render the services in an effective manner. In order to enable you to effectively supervise the various activities performed by the various categories of health workers specific theoretical and practical guidelines on supervision are also required.



This module is developed to help you in improving your knowledge and capability for providing better quality of RCH services to the community as well as to effectively supervise and facilitate functioning of the health functionaries. You can use this as a resource material to read and understand during the training and use as a reference material even after the training course is completed. This module contains the following five Blocks viz.

1. Management,
2. Communication,
3. Maternal Health ,
4. Child Health, and
5. Adolescent Health.

Each block has been divided into units and sub-units which contain theoretical concepts along with practical exercises/illustrations/case materials at appropriate places as well as self-assessment questions to make your learning, interesting and effective.



# Management

for

## M.O.(P.H.C.)







## ***Introduction***

The Reproductive and Child Health (RCH) Programme was launched throughout the country on 15<sup>th</sup> October, 1997. This Programme aims at achieving a status in which people will be able to regulate their fertility, women will be able to go through their pregnancy and child birth safely, the outcome of pregnancies will lead to well being and survival of the mother as well as of the child and couples will be able to have sexual relation free of fear of pregnancy and of contracting sexually transmitted diseases.

The RCH concept consists of providing to the beneficiaries need-based, client-centred, demand-driven and high quality integrated services which include:

- Maternal health services
- Child health services
- Prevention of unwanted pregnancies
- Prevention and management of RTI/STI
- Adolescent health services

The provision of good quality care is the crux of the RCH Programme. Thus, greater emphasis is given to quality of services under the RCH Programme than what had been the case under National Family Welfare Programme. Good quality of services is determined by:

- Type of services provided – need-based,
- Competence of the service provider i.e., the Health Worker at sub-centre level,
- Good quality equipment which is correct, appropriate, well-maintained and well-utilized,
- Social aspects
  - Gender sensitivity
  - Timing for provision of services suitable to women
  - Encouraging male participation
  - Involvement of women in the programme.



In order to ensure provision of quality services, the RCH Programme strategy includes:

- Community Need Assessment and sub-centre planning for ensuring need-based, client-specific and demand-driven services.
- Adequate management of these RCH services at each level in terms of the factors responsible for quality of services.
- Training has been included under the RCH Programme for improving task performance and competence of the service providers.

The training for the Multipurpose Health Workers, Health Assistants and Medical Officers at PHC has been designed as an Integrated Skill Training course which not only aims at improving technical competence for performing a task but also improving the managerial capability in terms of need assessment, involvement of other village level workers, estimation of material requirement, maintenance and utilization of equipment, maintenance of records and reports for making these services effective. The module in question has been prepared for the management component under the Integrated Skill Training of Medical Officers (PHC).

The Management Training Module for Medical Officers (PHC) under the Reproductive and Child Health (RCH) Programme will help you perform managerial responsibilities for the services to be provided at the sub-centre level, more effectively. The module has been divided into six major units that deal with the important management aspects of the services to be provided at the PHC level. In each unit, the learning objectives as well as the major content areas are highlighted before examining in detail each aspect. At the end of each unit, key points are given to reinforce the important aspects. The objective is to make it easy for the Medical officers to remember these key issues as they go about with their work.

The units incorporated in this module are listed below:

Unit-I A	Community Need Assessment
Unit-I B	Preparation of Annual Action Plan
Unit-II	Managing Human Resource at PHC
Unit-III	Management of Drugs, Vaccines and other supplies
Unit-IV	Management of Contingency fund at PHC
Unit – V	Monitoring, Evaluation and use of Management Information System (MIS) at PHC
Unit – VI	Quality Improvement

## UNIT – I A

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### ***COMMUNITY NEED ASSESSMENT***

#### **LEARNING OBJECTIVES:**

This sub-unit should enable you to:

- ❑ Explain the CNA concept
- ❑ Differentiate between CNA and Community diagnosis
- ❑ Ensure adoption of the CNA mechanism through use of CNA process at PHC/Sub-Centre level

#### **CONTENTS:**

- ❑ Introduction
- ❑ CNA Concept
- ❑ Importance of CNA
- ❑ CNA Approach
- ❑ CNA Process
- ❑ Community Diagnosis and the CNA

#### **1.1 INTRODUCTION:**

***Reproductive and Child Health*** care is an integral part of primary health care, which is a public health approach and puts people first. It addresses reproductive and child health problems such as Family Planning, safe motherhood including care of the newborn, prevention and management of complications of abortion,



RTI, STD, HIV/AIDS and Adolescent health. It also entails involvement of people in their own health care. It is an integrated and intersectoral programme with a Bottom-up approach. The focus is essentially on the family and the community and the emphasis is on the quality of services.

## 1.2 CONCEPT OF COMMUNITY NEED ASSESSMENT:

The “Community Need Assessment (CNA) Concept” refers to need assessment and planning for services with the involvement of the community, NGOs, Community Health Volunteers, Women’s groups and Panchayat. Since the emphasis is on providing quality health and family welfare services as well as on promoting use of Birth spacing methods, the CNA concept means that ***these would be based on the actual needs of the people and not on the needs as perceived by the top level professionals and administrators.***

Thus, the implementation of the RCH programme is focussed at sub-centre level and enables the health worker (female) to take initiative in order to organize health care services in accordance with actual community needs and demographic projections of the sub-centre area.

## 1.3 IMPORTANCE OF CNA:

Through the CNA approach, you can provide services to the community based on their actual needs, as these will be assessed systematically. And therefore, these would help you in:

- Setting priorities,
- Identifying target as well as high risk groups,
- Leading to realistic estimation of services and matching of resources needed for the same,
- developing realistic action plan/work plan for the functionaries/service providers that would be relevant to local situations.

You can use this approach for distribution of family planning contraceptives such as oral pills and condoms, provide sexuality and gender education & counselling and create awareness concerning family planning and child care (use of Home Available Fluid and Oral Rehydration Solution), importance of breast feeding and nutrition etc. In addition, you could also organize family life education programme.

#### **1.4 WHAT IS THE CNA APPROACH?**

One of the highlights of the Reproductive and Child Health (RCH) programme, is that the services to be provided will be client-centred, demand-driven, of high quality and based on the needs of the community arrived through decentralized participatory planning. After extensive consultation with the State Governments and experts, the Ministry of Health and Family Welfare of the Indian Government decided to do away with the centrally determined targets for contraceptive acceptance that dominated the management of the programme. Thus, in 1996, a policy named Target Free Approach came into effect and implemented throughout the country. However, the term target-free approach was misunderstood at the grass-root level to mean abolition of all work targets for service providers. Hence, to avoid such confusion, this was changed to the CNA approach.

#### ***Exhibit 1.1***

##### **CNA APPROACH**

- ◆ Need based participatory planning
- ◆ Community involvement in assessment of their needs and planning, monitoring and surveillance
- ◆ Self-estimated goals by Health Workers
- ◆ Integrated package of services
- ◆ Good quality of care
- ◆ Educating community



## 1.5 CNA PROCESS:

At the village level, you will be interacting with two types of teams. The first is the working team that you will help in developing under the leadership of a Health Worker (Female). It will consist of the following people:

- Anganwadi workers,
- Traditional Birth Attendants/Dais,
- Mahila Swasthya Sangh or any equivalent group (DWACRA etc.),
- Link persons (if any ),
- Leaders of youth organization

These members can directly assist the Female Health Worker for conducting household surveys, collection of relevant information and reporting to health workers major events like Birth, Death, Marriage, Epidemics etc.

Your task consists of encouraging these workers to meet with people in the community, collect information, provide counselling and motivation, and health education.

The information that these workers would bring can be of the following type:

- Number of eligible couples,
- Number of pregnant mothers,
- Number of pregnant mothers registered,
- Number of births,
- Number of deliveries (home deliveries & institutional deliveries)
- Number of abortions,
- Number of children < 1yr, <3 yrs & <5 yrs of age.

The other team that you will be interacting with is the **consultative team** that comprises of the following:

- Panchayati Raj members
- Teachers
- Religious leaders/Priests
- Members of NGOs
- Members of informal organizations

The members of the consultative team can directly collaborate with the working team for collection of relevant information and reporting of the major events like Birth, Death, Marriage, Epidemics etc. The members of the consultative team would be an asset to you in providing more information along with household survey and also in validating certain information being provided and collected by the team. Under the leadership of the Health Worker (Female), these teams would also help in providing Health and Family Welfare services, increasing awareness, gender and sexuality education and counselling.

Your task will consist of conducting regular meetings with these two teams and involving them in the planning and in the provision of services, discussing the priority issues, the steps and actions taken, and their results. Some of the information you should share with them may include:

- Number of ante-natal cases registered
- Number of mothers advised to go to FRU/Hospital for check-up, etc.
- Number of children immunised, number of drop-outs for an immunization etc.

## ***Exhibit 1.2***

### **Steps for CNA and Consultative Process**

*You must ensure that all the steps are followed by the health workers at each sub-centre level*

- ◆ Develop a working team consisting of AWWs, TBAs, MSS members, link persons and leaders of youth organisations at every village.
- ◆ Form a consultative group of panchayat members, teachers, priests, opinion leaders etc.
- ◆ Conduct household survey with the help of the working team.
- ◆ Consult the consultative members for collection of more information and confirmation or validation of the information collected through survey.
- ◆ Estimate the needs for each health and family welfare service based on the analysis of survey data.
- ◆ Hold meetings of the working team and consultative members every month regularly.
- ◆ Share information regarding services provided and seek feedback.

## ***Exhibit 1.3***

### **Steps to be followed at PHC level**

- ◆ Assess the needs of health care services to be provided at the PHC level as a result of discussions carried out with the Female Health Worker who in turn consults the AWWs, TBA, MSS members, Link persons and members of Consultative group at the grass root level.
- ◆ Work out matching resources needed for estimated volume of services
- ◆ Procure required supplies and try to generate community resources through the working team.
- ◆ Compare the present requirements of resources with the projections done by demographic calculation.
- ◆ The requirements of services for the current year also need to be compared with the actual performance of the previous year and it should be ensured that these are 5-25 per cent higher.

Thus, the CNA mechanism for estimation of community needs consists of conducting household surveys and consultations with



representatives of the community and other functionaries working in the same community.

You will also need to refer to State/District census reports, or information with the District Collectorate or with the District Statistical officer concerning population, the number of births, deaths, marriages, epidemics etc.

#### ***Exhibit 1.4***

##### **Hence the CNA process is:**

- ◆ Based on the felt needs of the community
- ◆ Not arbitrary but systematic and relevant to local situations
- ◆ Not to give uniform target to all sub-centres as was done in “Top-down” approach but to develop realistic targets/work load based on local variations in requirements/needs for the services.
- ◆ Based on people’s involvement and consultations with them for larger coordination, cooperation and for better utilization of the

### **1.6 COMMUNITY DIAGNOSIS AND THE CNA:**

As you are aware, in Community Health, epidemiological skills are needed to examine the whole population and select the most suitable diagnostic indicators that describe and explain health problems.

In the past, you have, in fact, been making a community diagnosis in order to decide which strategy would be more effective in raising the health status of the population.

Community Diagnosis, as we understand, consists of the following:

**COMMUNITY DIAGNOSIS:**

**Talk with community + Records + Survey → COMMUNITY  
DIAGNOSIS**

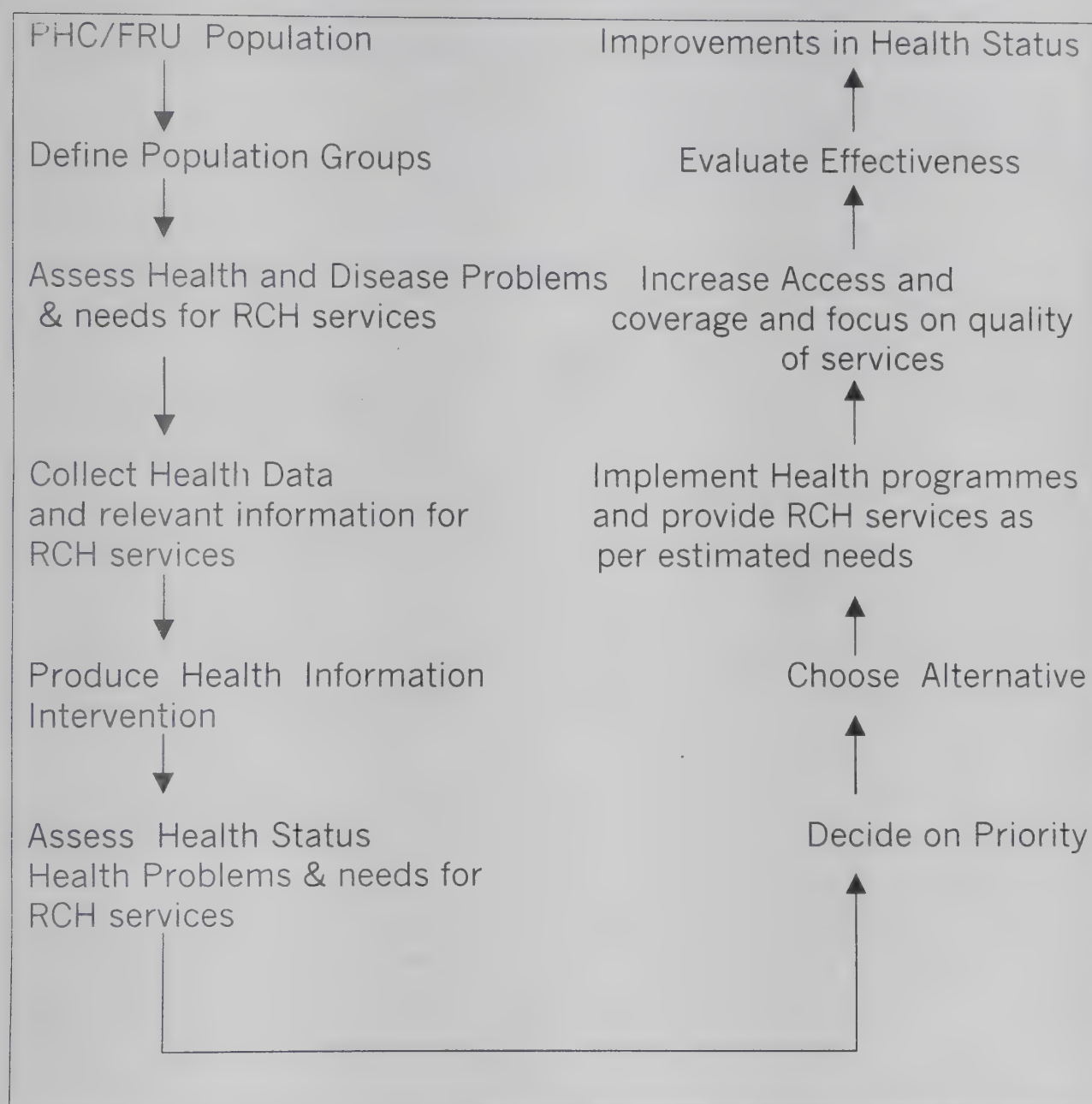
As you know, Community diagnosis is very important in public health and it allows you to continually assess disease prevalence within the community. This epidemiological tool, if used skillfully and imaginatively, helps you in defining the health and disease pattern within population groups. It also provides an objective assessment of the impact of various interventions.

You may be already applying the epidemiological approach, which is a fundamental skill for all of you to conduct community diagnosis and working for community health programmes that aim to reduce diseases and improve the community health status. You also organize special surveys in order to obtain epidemiological information. Therefore, you would appreciate that the CNA approach is nothing very new for you.

In fact, it essentially consists of making a Community Diagnosis and completing it with other components, equally important and essential such as social mobilisation of the community, providing counselling, motivation, health education (breast feeding, nutrition, Home Available Fluid, Oral Rehydration Solution etc.).

Both the community diagnosis and the CNA require the tasks that have been described in the following table and that you are required to carry out.

# **TASKS REQUIRING EPIDEMIOLOGICAL AND PLANNING SKILLS**





### KEY POINTS

- ◆ Now you will not receive fixed targets for MCH and family planning from higher level.
- ◆ You will assess the needs of the people in the community and estimate services required accordingly.
- ◆ You will compile data from the sub-centre

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***PREPARATION OF ANNUAL ACTION PLAN***

**LEARNING OBJECTIVES:**

With the help of this sub-unit, you should be able to:

- ❑ Explain Decentralised Planning and the need for Multilevel Planning
- ❑ Match the service requirement with the resource requirement
- ❑ Validate CNA data with the demographic calculations for PHC
- ❑ Fill the Annual Action Plan Form provided by GOI with the help of estimated service data.
- ❑ Prepare plan of actions for carrying out the technical and managerial activities in the area covered under Primary Health Centre.
- ❑ Describe the PHC specific data for the establishment of District Specific Rates.

**CONTENTS:**

- ❑ Introduction
- ❑ Decentralized Planning and the need for Multilevel Planning
- ❑ Development of the Annual Action Plan
- ❑ Action Plan forms
- ❑ Comparison of data collected through surveys with estimates emerging from demographic calculations
- ❑ Need for PHC data for the establishment of district specific rates

## 1.7 INTRODUCTION:

***Community Need Assessment*** provides a basis for determining the felt health care needs of the population in a given area. In order to prepare an action plan, you should be able to assess the needs of the covered area in a realistic way, set possible targets accordingly for each service and make a plan for the provision of the required services.

Planning is generally carried out at various levels such as the National, State, District, Block and Village clusters. Decentralised planning is initiated at the lowest spatial level (attached to the decentralised government) by involving people, and from the perspective of solving local problems through the utilisation of locally available resources.

## 1.8 DECENTRALIZED PLANNING AND THE NEED FOR MULTILEVEL PLANNING:

The implementation of the RCH Programme is focussed at sub-centre level plan. The core of decentralized planning lies in enabling the Health Worker (Female) to take initiatives in order to organize health care services in accordance with actual community needs and demographic projections of the sub-centre area. Authority and responsibilities would be delegated to the Female Health Worker. Hence, planning done by you at the PHC level is not only need-based but also scientific and realistic.

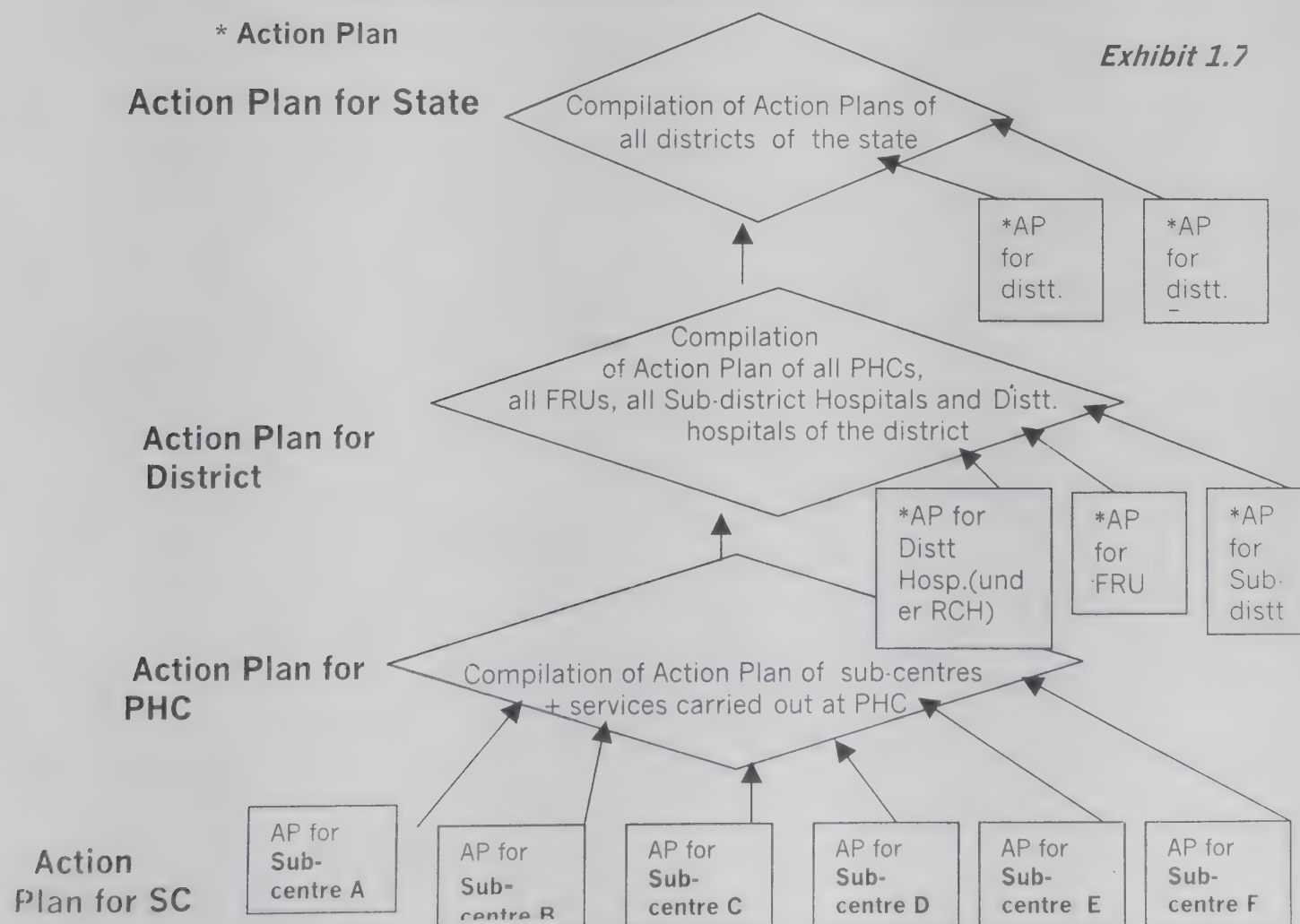
It is often said that the decentralized planner, aware of the local problems and resources, the needs and aspirations of the people would be in a better position to plan for the neglected regions, sectors and sections of the community and thereby ensure the equity concern in development. Secondly, with people's participation ensured under decentralized planning, the focus is attuned to solving local problems such as area specific health needs and under-utilization of locally available resources.



Instead of basing ourselves on pre-determined targets provided to us from the top levels, the emphasis is now on setting our own targets and priorities at each level. In other words, we use multi-level planning to carry out our Programme. We begin at the sub-centre level, which is crucial. The sub-centre plans are sent to the PHC which then compiles them and adds the components of other services provided at the PHC level such as number of MTPs to be done, number of RTI/STI cases to be treated and referred to prepare an action plan for each PHC. These plans are then sent to the district level which further adds its components and which together forms the basis of the annual plan for the district. All the district plans are put together to prepare the annual plan of the state.

Thus, planning for all the service components of the RCH Programme is multi-level. It starts from the most peripheral level and goes up to the higher level, which is basically, a "Bottom up" approach and is the basic principle of decentralized planning.

#### **PREPARATION OF ACTION PLAN – FLOW OF ACTIVITY**



## **1.9 DEVELOPMENT OF THE ANNUAL ACTION PLAN:**

### **1.9.1 Preparation of the Sub-Centre Plan:**

This plan is prepared by the ANM on the basis of the following steps:

- a. Preparation of the map of the Sub-centre and its catchment area.
- b. Conducting household surveys to collect relevant information required
- c. Conducting group meetings for consultation with the working team members and other members including Panchayat members, schoolteachers, priests, etc. Sharing of the information collected by household surveys, asking for more information and validation of the same
- d. Comparing of this data with demographic calculations.
- e. Setting priorities, developing feasible norms for each service as per the identified needs
- f. Identifying high-risk groups
- g. Estimation of work load and resource requirement for each component of the services and preparation of a plan of action by indicating details of fixed days and time for each service, strategies for providing these services such as by conducting clinic at sub-centre headquarters or at other villages of sub-centre area and home visit for outreach services (venue should be fixed for conducting clinics)

**Illustration:**

Shanti Devi, a Female Health Worker set out to prepare an Action Plan with the help from members of the village working team. She started preparing the map of her sub-centre area which comprised of 5 villages. The population of this sub-centre was 5000. She took help from the AWWs & Mahila Swasth Sangh members and leaders of youth organisations to conduct household survey in each village in order to collect information on a structured format. In order to devise this structured form, she consulted her supervisor. After the survey, she realised that the priority group is the number of pregnant mothers, which were found to be more than expected. She consulted the members of the team to validate her information. From her survey, the number of pregnant mothers came out to be 250. Then, she calculated the **probable number of pregnancies** with the formula:

**(Population of the area x Birth Rate of the area + 10% of pregnancy wastage)**

She contacted the MO (PHC) and found out the birth rate of the district, which was 30 per 1000 live births. Hence, the probable number of pregnancies

$$\left[ \frac{=5000 \times 30}{1000} \right] + 10 \% \text{ of pregnancy wastage}$$

$$= 150 + 15 = 165$$

Then, she reached at the probable reasons for this discrepancy which were:

- Acceptance of Family Planning methods are low
- The survey is not being carried out properly
- Population from surrounding villages have migrated to these villages

Depending on the need she calculated the iron and folic acid tablets required and focussed on family planning methods such as condom distribution for the following year. Based on this data, she filled the Action Plan form for the sub-centre.



### 1.9.2 Preparation of the PHC Plan:

The PHC plan would be a compilation of all the sub-centre Action Plans from all the sub-centres under that particular PHC. As the Medical Officer in-charge of the PHC, you have to calculate the materials, vaccines, medicines etc. required to accomplish the services. Depending on the existing stock of supplies, you must work out the net requirement for serving the felt needs of the population.

You will only be adding the additional information that is not being generated at the sub-centre level e.g., number of MTPs done, number of RTI/STI cases treated and referred. All the information that is additional to that generated at the sub-centre has been printed in Capital letters in the form that you will be filling up and which is annexed to this module.

You must pay special attention to certain matters such as family planning services and in particular male sterilisation since it is only 3% of the total number of sterilisation operations.

#### ***Exhibit 1.9***

##### **Steps in the Preparation of the Annual Action Plan:**

- ◆ Identify area of the PHC and its catchment area
- ◆ Compile data from Sub-Centres/PHC (Records available with Extension Educator/Computer/ by utilizing form no. 1 received from sub-centres)
- ◆ Conduct a Household survey to collect relevant additional information not available through form 1
- ◆ Conduct group meetings for consultation with the other working members and block and village representatives.
- ◆ Compare these estimates with demographic calculations
- ◆ Identify high risk groups
- ◆ Prioritize the needed services in the area
- ◆ Determine work loads, resource requirement for each component
- ◆ Set targets/norms
- ◆ Match it with supplies and facilities
- ◆ Prepare a month-wise activity plan for the year

## **1.10 ACTION PLAN FORMS:**

A document mentioning activities to be carried out in a specified time frame indicating the resource requirements, timetable and place/venue for each action is referred to as the "Action Plan".

A number of forms are prescribed in the manual of Community Need Assessment Approach in which the reports for the sub-centre must be made by the ANM, and the reports for the PHC as well as the FRU/Sub-district hospital and the District Hospital by the Medical Officer in-charge. These are then handed over to the District Family Welfare Officer, who in turn hands it over to the State government and the Government of India (Department of Family Welfare).

The forms included in the Annexe to the manual (CNA) are of 2 types (Action Plan Forms and Monitoring Forms). Under the Action Plan Forms, form I is the Sub-centre Action Plan, Form II is the Action Plan for the PHC, Form III is the Action Plan for FRUs/Sub-district Hospitals and District Hospitals and Form IV is the Action Plan for the District. Form V is the action plan for the State.

### **1.10.1 Sub-Centre Action Plan Form:**

The sub-centre Action Plan has to be prepared once every year in the beginning of the financial year by the ANM. This is the form that allows her to assess the need of the community for her and in other words it sets down targets for the ANMs for her work during the year. This form constitutes the Action Plan for the sub-centre.

### **1.10.2 PHC Action Plan Form:**

The PHC action plan form has two essential portions: one part concerns those items for which services are provided in the PHC directly such as deliveries conducted in the PHC, Medical Termination of Pregnancy cases done in PHC, treatment given in the RTI/STI cases, immunisation done in the PHC etc. and the other part relates to the services provided by the ANMs.

As regards the second part, the PHC have to compile the need assessment data worked out by individual ANM and fill up the PHC Action Plan.

### **1.10.3 FRU Action Plan Form:**

The hospitals generally provide mother and child care facilities, in some cases directly, like immunisation etc. and in addition, they provide specialist services with regard to Obstetric care, treatment for RTI/STI, performing sterilisation operations etc. Therefore, these hospitals must reflect in their Action Plan only the services they provide directly as hospitals and submit their Action Plan to the District and Family Welfare Officer.

### **1.11. COMPARISON OF DATA COLLECTED THROUGH SURVEYS WITH ESTIMATES EMERGING FROM DEMOGRAPHIC CALCULATIONS:**

Once the needs or the requirements are assessed by the consultative process, the data derived would have to be compared with the figures of earlier years as well as the number of pregnancies estimated based on demographic calculations. This would enable the planners at the district level to appraise the **validity of the requirements** assessed. The following are some key points that you should be aware of, in order to validate the results:

- To estimate the probable number of pregnancies that may occur in any area, the following formula could be used:  
Probable number of pregnancies = Population of the area x Birth rate of the area (district/state) + 10 percent for pregnancy wastage

#### ***For example:***

If the population of the PHC is 30,000 and the District Birth Rate is 30 per 1000 live births, then the calculation would be as follows:



$$\text{Population} \times \text{Birth Rate} = \frac{30,000 \times 30}{1000} = 900$$

$$\text{Add 10 percent for pregnancy wastage} = 900 + 90 = 990$$

(The estimates based on the State or District Statistics will be more precise and should be used for planning in PHC). You can collect this information from the District Statistical Officer/District Family Welfare Bureau. If the survey data for number of pregnancies is less than 990, it may indicate that:

- Acceptance of Family Planning methods is high;
- The ANM is not carrying out the survey properly;
- Reporting is inadequate;
- Population of the area has migrated.
- The number of pregnancies will also indicate the number of deliveries that are expected in the PHC. This would also be the target of antenatal registration.
- Accordingly, the number of ANC visits, requirement of T.T. doses, IFA tablets can be worked out.
- It has been estimated that 15 percent of antenatal mothers registered are usually high-risk cases.

***For example:***

Birth Rate being 30 per 1000 and the PHC population 30, 000

**Detection and referral of high risk pregnancies (i.e., 15%)**  
 $= \frac{990 \times 15}{100} = 148.5$

100

**“990” being probable number of pregnancies**

- It has also been estimated that 50% of the antenatal cases registered are anaemic.

*For example:*

Birth rate being 30 per 1000 and 30, 000 the population of a PHC

**Detection and treatment of anemic mothers (i.e., 50%)**

$$= \frac{990 \times 50}{100} = 495$$

**“990” being probable number of pregnancies**

- The number of live births to be expected or deliveries to be expected are estimated by the following formula

**Number of live births = Population of area x Birth Rate of area**

- The figures of high risk new-borns are estimated to be 10% of the number of live births

**Estimates of Infants alive at one year = No. of live births – No. of infants who have died during the Year**

(No. of infants who have died during the year can be calculated by using the Infant Mortality Rate of the area).

- Estimates of Children below 3 years of age can be estimated from the fact that the population of children below 3 years is 8% of the total population.
- Estimates of Children below 5 years of age:  
This age group constitutes 13% of the total population.

#### **1.12 Some of the important things to remember while filling up the Action Plan forms are as follows:**

- The ANM will compile information **from the census reports for State/District and information with regard to population and birth rate** from the census books which will be available with the District Family Welfare Officer or in the District Collectorate or with the District Statistical Officer.

- Assessment of needs relating to antenatal or prenatal care, deliveries, vaccinations etc. must be done after an **extensive consultation process with the community**.
- With regard to services such as antenatal, natal care etc., a comparison should be made with the performance of the previous year. Normally, there should be an **increase in coverage for each item by more than 5% every year** because of the normal increase in population and the rise in facilities to be provided to the citizens. If the increase is less than 5%, it should indicate that the assessment is probably incomplete or under estimated. **If the increase is more than 25%**, it should alert the superior officers that perhaps the assessment of the needs that has been made is unrealistic.
- The form contains items relating to cases of complicated pregnancies, complicated deliveries, complications after deliveries and cases of sick new-borns referred to PHC/FRU. For example, it is known **that about 15% of the deliveries are complicated** and unless they are handled at the PHC/FRU, there can be danger to the life of the mother. The number of referrals will be an indication of how well the ANM is doing her job.
- As regards the item relating to Reproductive Tract Infection/STI, it has been observed that **about 20-50% of men and women suffer from RTI/STI** after assessments.
- With regard to Oral Rehydration, the performance data relating to the whole country indicates that **Oral Rehydration provided to affected children is still only about 50%** cases. If the work regarding ORT is attended to properly, the increase in work during the year should always be **more than 15-20% compared to the previous year**.
- In Family Planning, special attention needs to be given to persuade men and women to use spacing methods if they have less than two children or sterilisation if they have two children.



Therefore, in the consultation and motivation process, **the priority group for the ANM should be girls about to be married.**

### **1.13 PHC/FRU SPECIFIC DATA FOR THE ESTABLISHMENT OF DISTRICT SPECIFIC RATES:**

The health centre at the PHC/FRU level is usually managed by a team of health workers where the medical officer is in-charge.

This team of PHC Health Workers has the following responsibilities:

- Health Planning including community participation.
- Health administration and the management of all community health programmes
- Training and supervision of all health staff.
- Outpatient services.

As the Medical Officer in-charge, you must first acquire a good knowledge of the PHC population and the total number of people who are “at risk “ of needing a service.

The Epidemiological Health information to carry out community diagnosis needed by you comprises

- The population of the PHC, its age-sex structure, migration and vital statistics.
- The main causes of morbidity and mortality
- The organization of the PHC health services, particularly with regard to access coverage and effectiveness.

With the help of health surveys conducted, you must find out the:

- Number of pregnancies occurring each year in the area of PHC.
- Number of deliveries supervised by a trained health worker etc.

This health data generated at sub-centre level and compiled at PHC level would provide the base for analysis and developing

**district specific rates.** Thus, the quality of CNA carried out at sub-centre level will affect the specific rates being determined by FRU and district. This then would form the basis for calculation of the National rates. Hence, the effective implementation of various health policies and programmes largely depends upon the supervision and control exercised by district officers over the management of health centres in the district.

#### 1.14 WORK PLAN:

Having the relevant information regarding catchment area, type of population, community needs, risk factors, priorities set, you are expected to prepare a work plan for your own convenience as well as for the information of community members. A work plan is differentiated from an action plan because it enumerates the activities to be performed weekly and not annually or monthly. A sample work plan is given below:

*Exhibit 1.10*

**WORK PLAN FOR MO (PHC)**

S. No	Major Activities	Approaches to be used	Resources required	Who is responsible?	Time		Supporting staff	Where to do
					From	To		
1.	Immuni- zation	Clinic	Vaccines cold chain equipment staff	MO/LHV	Once a week througho ut the period		.	PHC
				ANM	Once a week througho ut the period		LHV, HG's, TDs	Sub- Centre

S. No	Major Activities	Approaches to be used	Resources required	Who is responsible?	Time		Supporting staff	Where to do
					From	To		
2.	Antenatal care & Postnatal care	a. Clinic	Equipment s, medicines, staff	MO/LHV ANM	Once a week throughout the period			PHC
		b. Home visits	- do -	ANM ANM	- do - Through out the period		LHV HGs, TDs	Sub-Centre Village
3.	Monitoring	Meetings		MO(PHC)	Every 2 <sup>nd</sup> day of the month		PHN, HA (M or F)	PHC
		Field visits	Transport, POL	MO(PHC)	At least one visit in a fortnight to SC's		LHV	Field
4.	Reporting	Monthly reports	Stationary, registers, forms	i. ANM ii. MO(PHC)	Fixed days of a month from SC to PHC		Health workers (M), LHV	Sub-Centre PHC
5.	Orientation of Village working teams & consultative teams	Meetings	-	MO(PHC)	Last day of the month		Health Assistants	PHC & Sub-centre



### **KEY POINTS**

- ◆ Based on information collected through subcentres and relevant information collected from your PHC, you will estimate the requirement for each service to be provided.
- ◆ You will be comparing your estimated requirement for each service with the expected and as per demographic calculations
- ◆ You will fill up the Annual Action Plan form and submit it to the District.

# **FORM 1** **SUB-CENTRE (S.C.) ACTION PLAN**

**A.** General Information \_\_\_\_\_ Year \_\_\_\_\_  
 State \_\_\_\_\_ Population of S.C. \_\_\_\_\_  
 P.H.C. \_\_\_\_\_ (Birth rate) Distt./State \_\_\_\_\_  
 Sub-centre \_\_\_\_\_ Eligible couples \_\_\_\_\_  
 No. of Villages \_\_\_\_\_ (As on 1<sup>st</sup> April)  
 under the sub-centre

ANC=(Population x birth rate) + 10%

DELIVERY/LIVE BIRTH=(Population x birth rate)

Sl. No.	Consultation with	No. of Consultation	When consultation made (month of year)
1.	Panchayat or health committee of the Panchayat		
2.	Anganwadi worker/TBA		
3.	Women in Mahila Swasthya Sangh		
4.	Families on house to house basis		

Sl. No.	Service	Performance in last year	Planned performance in current year
	<b>Antenatal Care</b>		
1.	Total ANC cases registered in the area		
2.	No. of high-risk pregnant women detected and referred		
3.	No. of TT doses given TT 1 TT 2 Booster		
4.	No. of pregnant women with anaemia treated		
5.	No. of pregnant women given prophylaxis with IFA tablets		

Sl. No.	Service	Performance in last year	Planned performance in current year
6.	<b>Natal Care</b>		
7.	Total no. of deliveries in the area		
	No. of home delivery by		
	a) ANM/LHV		
8.	b) Trained birth attendant		
9.	No. of institutional deliveries		
	No. of pregnant women referred to PHC/FRU for delivery		
10.	<b>Neo-Natal Care</b>		
	No. of sick newborns referred		
11.	<b>MTP</b>		
	No. of women referred for MTP		

Sl. No.	Service	Performance in last year		Planned performance in current year	
		Male	Female	Male	Female
12.	<b>RTI/STI</b>				
	No. of cases detected and referred				
13.	<b>Immunisation</b>				
	No. of infants immunised (0-1 year)				
	BCG				
	DPT-1				
	DPT-2				
	DPT-3				
	OPV-0				
	OPV-1				
	OPV-2				
	OPV-3				
	Measles				
14.	No. of children immunised (more than 18 months)				
	DPT Booster				
	OPV Booster				
15.	No. of children immunised (more than 5 years)				
	DT				
16.	No. of children immunised (more than 10 years)				
	TT				



Sl. No.	Service	Performance in last year		Planned performance in current year	
17.	No. of children immunised (more than 16 years) TT				
	<b>IFA</b>				
18.	No. of children given IFA small (below 5 years)				
19.	No. of children administered Vit-A (9 months to 3 years) Dose 1 Dose 2 Dose 3-5				
	<b>ARI</b>				
20.	No. of cases under 5 with pneumonia - Treated with co-trimoxazole - Referred				
21.	<b>Acute Diarrhoeal Diseases</b> No. of cases under 5 - Cases treated with ORS - Referred				
22.	<b>Family Planning</b> No. of eligible couples who accepted permanent methods out of couples with a) 3 or more children b) 2 c) 1 child				
23.	No. of eligible couples who accepted temporary methods - IUD - Oral Pills - Condoms				

**FORM 2**  
**PHC ACTION PLAN**

- A.** General Information \_\_\_\_\_  
 Year \_\_\_\_\_  
 State \_\_\_\_\_ Birth Rate of District/State \_\_\_\_\_  
 District \_\_\_\_\_  
 PHC \_\_\_\_\_  
 No. of sub-centres under PHC \_\_\_\_\_ Eligible couples \_\_\_\_\_  
 (as on 1<sup>st</sup> April)  
 Population of the PHC (Total of population under sub-centre) \_\_\_\_\_

Sl. No.	Service	Performance in last year	Planned performance in current year as compiled from sub-centre plans
1.	<b>Antenatal Care</b> Total ANC cases registered in the PHC area		
2.	No. of high risk pregnant women - Treated - Referred to FRU		
3.	No. of TT doses given TT1 TT2 Booster		
4.	No. of pregnant women with anemia treated		
5.	No. of pregnant women given prophylaxis with IFA tablets		

Sl. No.	Service	Performance in last year	Planned performance in current year as compiled from sub-centre plans
6.	<b>Natal Care</b> Total no. of deliveries in the PHC area		
7.	No. of home deliveries by c) ANM/LHV d) Trained birth attendant e) Untrained birth attendant		
8.	No. of institutional deliveries a) At PHC b) At sub-centre		
9.	No. of pregnant women referred to FRU for delivery		
10.	<b>Neo-Natal Care</b>		
11.	No. of sick new born referred - Treated - Referred		
12.	<b>MTP</b> No. of MTPs referred to FRU/District		



Sl. No.	Service	Performance in last year		Planned performance in current year as compiled from sub-centre plans	
13.	<b>RTI/STI</b> No. of cases a) Identified by ANM b) Death with at PHC (i) Treated (ii) Referred				
14.	<b>Immunization</b> No. of infants immunized (0-1years) BCG DPT-1 DPT-2 DPT-3 OPV-0 OPV-1 OPV-2 OPV-3				
15.	<b>Measles</b> No. of children immunized (more than 18 months) DPT Booster OPV Booster				
16.	No. of children immunized (more than 5 years) DT				
17.	No. of children immunized (more				

Sl. No.	Service	Performance in last year		Planned performance in current year as compiled from sub-centre plans	
18.	than 10 years) TT No. of children immunized (more than 16 years)				
19.	TT IFA  No. of children given IFA small(below 5 years)				
20.	<b>Vit. A</b> No. of children administered Vit-A (9 months to 3 years)				
21.	a) Dose 1 b) Dose 2 c) Dose 3-5 <b>ARI</b> No. of cases under 5 with pneumonia				
22.	a) Treated with co-trimoxazole b) Referred <b>Acute Diarrhoeal diseases</b> No. of cases under 5 a) identified by				

Sl. No.	Service	Performance in last year	Planned performance in current year as compiled from sub-centre plans
23.	ANM b) Attended at PHC (i) Treated with ORS (ii) Referred <b>Family Planning</b> Male Sterilization d) Conventional e) NSV		
24.	<b>Female Sterilization</b> a) Abdominal b) Laparoscopic		
25.	<b>IUD insertion</b> a) By ANMs b) By PHC		
26.	Oral Pill Users		
27.	Condom users		



## Material & Supplies

S.No	Items	Qty. used in previous year	Stock position on 1 <sup>st</sup> April	Additional Quantity required in current year
1.	<b>Contraceptives</b>			
2.	Nirodh pieces			
3.	Oral Pill Cycles			
4.	IUDs			
5.	Tubal rings			
5.	Dai Kits			
	<b>Vaccine Doses</b>			
6.	DPT			
7.	OPV			
8.	TT			
9.	BCG			
10.	Measles			
11.	DT			
	<b>Prophylactic Drugs</b>			
12.	IFA Tab. Large			
13.	IFA Tab. Small			
14.	Vit. A solution			
15.	ORS Packets			
16.	<b>Cotrimoxazole</b>			
	<b>Tab. Paediatric</b>			

## Equipment and Facilities

### 1. PHC Building Owned or Rented:

Sl. No	Items	No. Available	No. Functioning
1.	Vehicle		
2.	Refrigerator		
3.	ILR		
4.	Deep Freezer		
5.	Cold Box		
6.	Vaccine/Day carrier		
7.	X-Ray Machine		
8.	IUD kits		
9.	Examination Table		
10.	Weighing machine (infant)		
11.	B.P. Instrument		
12.	Stethoscope		
13.	Needles		
14.	Syringes		
15.	Autoclave		
16.	Steam Sterilizer drugs		
17.	Operation Theatre		
18.	MTP Suction Apparatus		
19.	Equipment for Infant		
20.	Resuscitation		
21.	Microscope & Lab		
22.	Equipment etc.		
23.	Oxygen Cylinder		
24.	Labour Room Table & Equipment		
	O.T. Table		
	Surgical Equipments relating to PHC expertise		

## Staff Position

Sl. No	Category of the Staff	Number Sanctioned	Number In position	Number Vacant since that date
1.	Medical Officer-1			
2.	Medical officer - 2			
3.	Lady Medical Officer			
4.	Dental Surgeon			
5.	Staff Nurses/Nurse			
	Midwife			
6.	Pharmacist/			
	Compounder			
7.	Lab.Technical/Lab			
	Asstt.			
8.	Radiographer			
9.	Computer			
10	Malaria Supervisor			
11.	Block Extension			
	Educator			
12.	Public Health Nurse			
13.	Lady Health Visitor			
14.	Driver			
15.	Multipurpose worker- Male			
16.	Multipurpose worker- Female			
17.	Class- IV Staff			

**Sign. (MO/PHC)**



### ***MANAGING HUMAN RESOURCE AT PHC***

#### **LEARNING OBJECTIVES:**

With the help of this unit, you should be able to:

- ❑ Perform supportive supervision of your subordinates with a focus on improving performance.
- ❑ Identify gaps in the performance of your PHC health personnel.
- ❑ Apply your skills for On-the-job training.
- ❑ Appraise the performance of health personnel in your PHC.

#### **CONTENTS:**

- ❑ Introduction
- ❑ Tasks of the medical officer
- ❑ Supportive Supervision
- ❑ Teamwork and Leadership
- ❑ On-the-Job Training
- ❑ Performance appraisal

#### **2.1 INTRODUCTION:**

***Human Resource Management*** is concerned with the “people” dimension in management. Since every Health Centre is comprised of people, acquiring their services, developing their skills, motivating them to high levels of performance and ensuring that they continue

to maintain their commitment to the organisation are essential to achieving organisational objectives.

As a manager of PHC, you are responsible for your staff. You are expected to provide support to health personnel and other workers like Traditional Birth Attendants, Community Health Volunteers, Anganwadi Workers etc.

## **2.2 THE TASKS OF THE MEDICAL OFFICER**

Following are some of the tasks of a Medical Officer (PHC) as regards Human Resource Management under RCH Programme:

- **Staffing**
- **Conducting monthly staff meeting**
- **Developing other health related functionaries and involvement of panchayat members**
- **Motivating other staff members**
- **Providing supportive supervision**
- **Teamwork and leadership**
- **Providing on-the-job training**
- **Appraising the performance of the health personnel**

### **2.2.1 Staffing:**

Ensuring staff at the primary health centre and all the sub-centres is one of your major responsibilities. It includes the process of filling the positions that may arise due to the creation of new positions, vacancies due to retirement, resignations, deaths etc. Proper staffing can minimise the costs of replacement and training and result in a more productive work force. You have to ensure staff at all sub-centres and also reallocate if needed. You can assess the current status of the health personnel with the help of the following table:

**Exhibit 2.1**

	<b>Sanctioned Positions</b>	<b>In Position</b>	<b>Vacant</b>	<b>Basic Education</b>
1. PHC/SC staff				
2. Support Staff				
3. New sanctions proposed if any				

*(For staff position categories, refer to the Action Plan Form - 2)*

**2.2.2 Conducting Monthly Staff Meeting:**

You must conduct a meeting of all your staff members every month in your PHC. You must also ensure that the female health worker conducts meetings of both the working team as well as the consultancy team regularly. You must participate in these meetings with the working group and the Mahila Swasth Sangh members periodically and patiently listen to their views as well as problems.

Meeting provides an ideal opportunity for face to face contact with different people, even opponents, and provides a unique opportunity for interaction and resolving interpersonal conflicts.

Meeting is one of the most effective tools for management and administration of health activities. Communication during meetings needs to be persuasive and motivational. In some meetings, you have to act as a leader and provide guidance and support as required.

**Before conducting a meeting,** you have to:

- Decide about the purpose or goals to be achieved.
- Decide the date, venue and time of meeting.
- Prepare agenda for the meeting.

**While conducting a meeting:**

- Explain the purpose or objective to be achieved
- Let the participants know their role and task.
- Involve all participants so that all should contribute.
- Summarize the viewpoints expressed by the participants before recording decisions.

**Post Meeting Activities:**

- Evaluate the meeting from the point of view of achievement of objectives of the meeting.
- Prepare minutes of the meeting and send it to all the participants particularly for the meetings, which involve personnel from other sectors.
- Follow-up to make sure that the decisions taken in the meeting are implemented.

### **2.2.3 Developing other health related functionaries and involvement of Panchayat members for Health action at community level:**

Apart from managing the Health Centre staff, you must also ensure participation of Link persons, leaders of youth organisations, Panchayat members, teachers and priests in health care delivery and involve them to assess community health needs. Share with them the achievement and shortfall of the services. Encourage all the village level workers, appreciate their contributions. If needed, ensure supervision by the Health Worker or Health Assistant.



## 2.2.4 Motivating other staff members

A health worker gets motivated to do her job when he/she is acknowledged and appreciated for his/her effort made for providing adequate services as per needs of the community. This acknowledgement/appreciation works as a reward to him/her most of the times.

*How will you recognise a motivated worker?*

*Exhibit 2.2*

### **A motivated worker:**

- Shows enthusiasm and has a positive attitude
- Believes her work is important
- Works well with her supervisor, other health workers and other workers in villages
- Willingly takes part in planning, performing and evaluating her own activities

**As a supervisor, you must follow these guidelines for motivating your workers:**

- **Set a good example**

You are a role model for the health workers working in the sub-centres. You must maintain a positive attitude. Ask for help if you need it. If you make a mistake, admit it. Be punctual, regular in your activities. This will encourage the worker to do the same.

- **Develop and maintain good personal relations**

Be friendly and communicative. Try to understand the health worker's behaviour, attitude etc. Do not criticise them unfairly, behind their backs, before other workers and clients. Maintain a good sense of humour and avoid getting angry.

- **Use a participatory leadership style**

You should share information with the health workers, so that they feel involved, and remain aware of what is going on around their subcentre, PHC and higher up levels. Encourage feedback. Use participatory leadership style whenever possible particularly with the experienced good workers and accept good suggestions offered by the health workers.

- **Guide, encourage and support health workers**

Giving guidance means working with health workers to help them perform their own task correctly. Let them know what you expect from them. Supporting them means providing the health workers with a satisfactory work environment with adequate equipments and supplies in working conditions and defending them in their dealings with the higher ups.

- **Reward a good work**

Praise is a powerful motivator. Make your workers feel his/her efforts are meaningful and are appreciated. Hence, praise them frequently and informally. Whenever a health worker does a good job, remember to praise them before other workers, clients and medical officers, this will increase their self-confidence.

## **2.2.5 What is Supportive supervision?**

**Supervision** is one of the functions of both management and leadership. It is the process of constant observation, evaluation and providing guidance to workers.

In the PHC Health System, supervision assumes great importance. It is the art of guiding, instructing and encouraging staff and the worker supervised must regard it as a support and a way of improving his/her competence.

**As a PHC Manager, you must:**

- ◆ Constantly keep a track of your staff by giving them necessary directions,
- ◆ Help them solve problems,
- ◆ Counsel them,
- ◆ Encourage them,
- ◆ Measure the efficiency, results and impact of the activities undertaken by the workers

Supervision is either direct on-the-spot or indirect through review of records/reports, from opinions of other supervisors, workers or beneficiaries/users of the services. **On the spot** direct supervision is considered to be the best

**2.2.5.1 What is a Supervisory Checklist?**

A **checklist** is a tool to help supervisors systematically monitor health services being provided by health workers. It contains a detailed list of important activities performed by that health worker. It will also help you in identifying gaps in their performance. You may associate it with a rating scale by giving a score for each step.

**2.2.5.2 What is a Supervisory Plan?**

A **supervisory plan** is a work plan for you to ensure that you are able to provide the required guidance to all the workers as per their needs. In a supervisory plan, you have to indicate which service or activity you intend to supervise.

### 2.2.5.3 How to supervise?

The activities comprising supervision can be divided into three stages. In order to make your supervision effective, you must rigorously carry out the various activities given under each stage.

#### Stage 1: Stage of Preparation

Prior to the stage of supervision:

- You must study documents e.g., CNA manual, RCH Programme document, State govt. rules and previous supervisory reports of your worker if available.
- You should identify priorities for supervision based on community needs and services to be provided under the RCH Programme.
- You have to prepare a supervision schedule e.g. **check list** for supervision.(Placed at the end of this unit)

#### Stage 2: Stage of Supervision

While supervising your subordinate:

- You should establish contacts
- You should review objectives, targets and norms
- You should observe as the workers carry out their tasks
- You should identify gaps and undertake any follow up of support needed.
- You should review the Annual Action Plan and match it with the estimated service needs.
- You should review estimated service needs, workload etc. based on the CNA approach.
- You should crosscheck the estimated services with district demographic calculations.



### Stage 3: Stage of follow-up

During the follow up:

- You must clarify objectives and targets to be achieved under the RCH Programme
- Jointly organise a training programme
- Reorganise the time table as needed
- Make changes in logistic support if needed
- Initiate action regarding supply/repair of equipments if needed

#### 2.2.6 WHAT IS TEAMWORK AND LEADERSHIP?

A **team** is a group of people who must significantly relate with each other in order to accomplish commonly shared objectives. In order to provide client-specific services based on user's choice, you have to estimate the needs of community members and decide on requirement of services accordingly. You as an individual cannot do it all alone, rather you will have to depend on workers of other sectors. Since, you and all the workers are working for the same community, it will be more productive if you are able to integrate their efforts and make them work together in a team.

**Teamwork** is defined as 'work done' by a number of associated individuals/workers who are committed to doing the work assigned to them.

In this process, each person in the team does a part of work and this part is co-ordinated with the efforts of others. Teamwork is understood as a continuous condition of working together in the common interests of the group. However, effective teamwork basically depends on commonality of purpose. The capable and effective leadership is the most crucial aspect of teamwork. As a leader of the team, the following steps must be carried out by you to make your team functional.

**Steps for making your team functional**

- Identify activities which can be done by each member of the team
- Consult them before assigning responsibilities.
- Assign activities with a time frame
- Monitor activities conducted by them
- Take feedback about team members while you are making home visits
- Give feedback to the team members on their performance
- Give support and guidance to team members, wherever needed
- Encourage the team members to continue with the activities assigned
- Appreciate contribution of the team members

## **2.2.7 HOW TO PROVIDE ON-THE-JOB TRAINING?**

**Training** is a learning experience in that it seeks a relatively permanent change in an individual that will improve his/her ability to perform on the job. We typically say training can involve the **changing of skills, knowledge, attitudes and social behaviour.**

Training is a sub-system of the RCH Programme. Therefore, as a manager, you are responsible for training and development of your subordinates so as to improve the overall quality of services.

Under the RCH programme, training should provide the trainee with a given model to follow, specific goals to achieve, an opportunity to perfect the skill, feedback on how well the trainee is progressing and praise for transferring the acquired skills to the job.

The most widely used method of training takes place on-the-job. This can be attributed to the simplicity of such methods and the impression that they are less costly to operate. You may often be requested by the District Training Officer to conduct an On-the-Job training at your own level.

On-the-Job training places the employees in an actual work situation and makes them appear to be immediately productive. The supervisor is able to provide guidance at each step as required.

In the process, you may have to demonstrate how to perform the task correctly as the worker observes. Then, ask the worker to demonstrate it under your supervision. Repeat till the worker has mastered the skill.

### **2.2.7.1 Types of On-the-Job Training**

#### **Skill-based Programmes**

This is meant for people seeking to improve their performance skills and to improve the quality of services. Under the RCH programme, you have to put the trainee under the guidance of a LHV/MO (Lady). In order to impart training to your workers, you have to follow four basic steps.

- 1<sup>st</sup> step: Prepare the trainees by telling them about the jobs and overcome their uncertainties.
- 2<sup>nd</sup> step: Present the instructions.
- 3<sup>rd</sup> step: Have the trainees try out the jobs to demonstrate their understanding.
- 4<sup>th</sup> step: Place the workers into job, on their own with an assistant. Repeat practice till they have mastered the skill.

### **2.2.8 HOW TO APPRAISE THE PERFORMANCE OF A WORKER?**

#### **2.2.8.1 *Performance Appraisal:***

- is used as a basis for reward allocation such as salary increases, promotions and other rewards.
- can be used for identifying areas where On-the-job training or Off-the-job training are needed.
- can be used as a criterion against which selection devices and development programs are validated.

#### **2.2.8.2 *Measures of Performance:***

You can have four common sources of information, which are frequently used to measure actual performance:

- personal observation,
- statistical reports,
- oral reports and
- written reports.

However, a combination of them increases both the number of input sources and the probability of receiving reliable information.

### **2.2.8.3 Appraisal Methods:**

**Essay appraisal (Annual Confidential Report):** The simplest method of appraisal so far adopted by you has been to write Annual Confidential Report. However, you can further strengthen it by writing a narrative describing employees strengths, weaknesses, past performance and his potential, as well as suggestions for improvements.

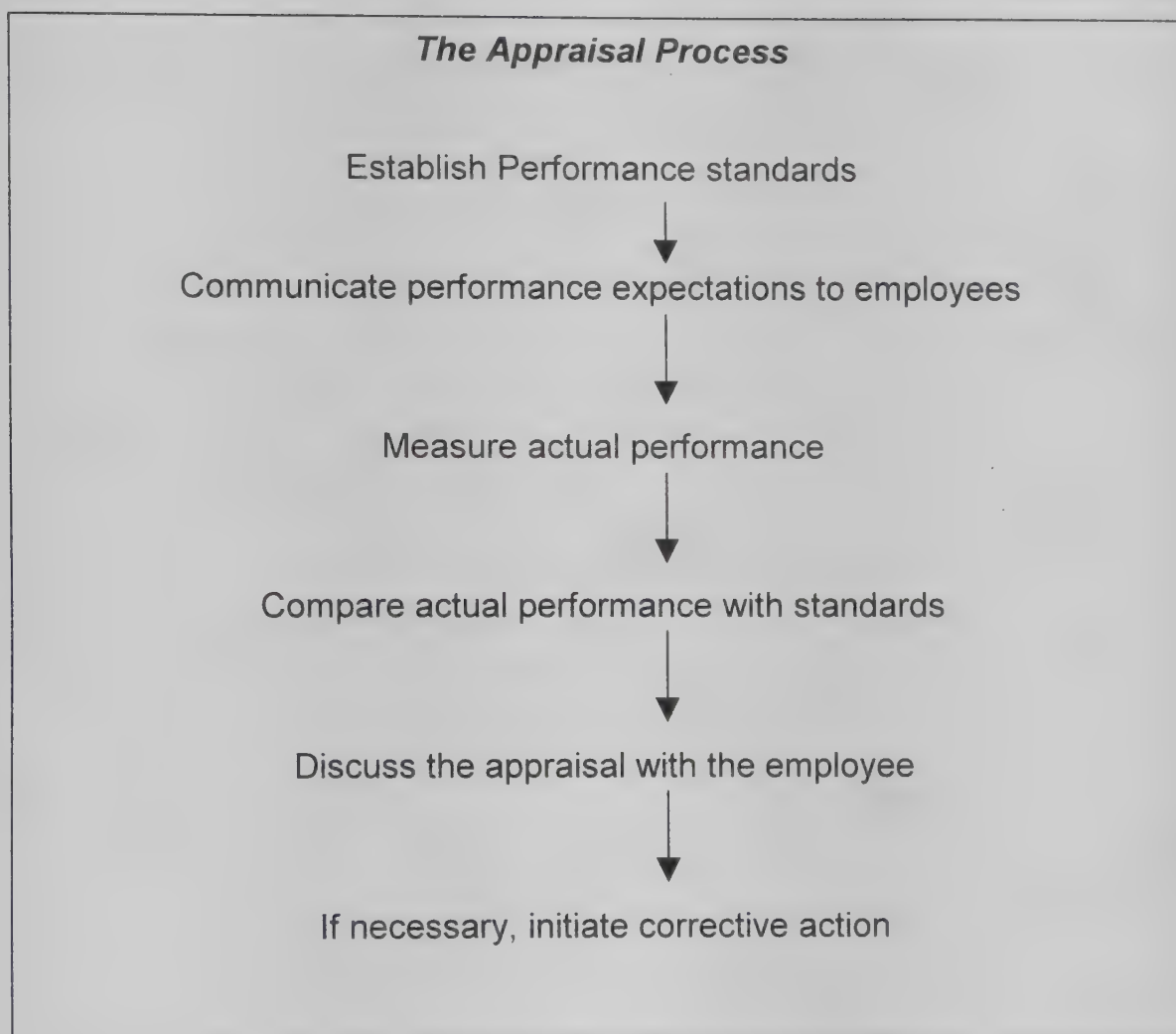
**Performance appraisal** must be done objectively. A performance checklist for assessment of tasks performed by all your staff must be developed. The supervisory checklist with a rating scale can be used as an objective tool for performance appraisal.

**Critical Incident Appraisal:** In this, you can use a list of behavioural descriptions and check off those behaviours that apply to the employee.

**For instance: Evaluate** the subordinate on the basis of:

- One success story
- One failure story.





### **KEY POINTS**

- ◆ You have to ensure staff at all subcentres. Reallocate if needed.
- ◆ You have to assess training needs.
- ◆ You have to provide supportive supervision at your own level.
- ◆ You should be able to conduct monthly meetings at your own level on relevant topics.
- ◆ You have to appraise the performance of the staff working under you.

### ILLUSTRATIVE MONTHLY SUPERVISORY CHECK-LIST FOR HEALTH WORKER (FEMALE)

NAME \_\_\_\_\_ SUB-CENTRE \_\_\_\_\_  
PHC \_\_\_\_\_

<b>ACTIVITIES</b>		<b>NOTES</b> *	
	<i>Date</i>	<b>Date</b>	<b>Date</b>
<b>1. Team activities</b> (i) Participation in staff meetings (ii) Coordination with HW (F), HGs and Dais (iii) Participate in camps and campaigns  <b>2. Record keeping</b> (i) Prepare, maintain and use records and reports (ii) Maps and charts  <b>3. Immunisation</b> (i) Give immunisation (ii) Immunise pregnant women with TT (iii) Educate women about immunisation  <b>4. Primary medical care</b> (i) Treatment of minor ailments (ii) Referral to PHC  <b>5. Family welfare</b> (i) Use eligible couples register (ii) Motivate people to accept			

<b>ACTIVITIES</b>		<b>NOTES</b> *	
	<b>Date</b>	<b>Date</b>	<b>Date</b>
<p>contraceptive methods</p> <p>(iii) Distribute contraceptives</p> <p>(iv) Accompany acceptors to hospital</p> <p>(v) Follow-up of acceptors</p> <p>(vi) Establish male depot holders</p> <p>(vii) Promote family welfare services in the community</p> <p>(viii) Identify women leaders and help to train them</p> <p>(ix) Attend community meetings to promote contraception</p> <p>(x) Identify and refer medical termination of pregnancy cases</p> <p>6. <i>Nutrition</i></p> <p>(i) Identify malnutrition cases</p> <p>(ii) Distribute vitamins and mineral supplements</p> <p>(iii) Educate community on nutrition</p> <p>7. <i>Vital events</i></p> <p>(i) Record and report births and deaths</p> <p>8. <i>Communicable diseases</i></p> <p>(i) Identify and report communicable diseases</p> <p>(ii) Educate the community about notifiable diseases</p> <p>9. <i>Dais training</i></p> <p>(i) List <i>dais</i> in the area</p> <p>(ii) Help train <i>dais</i></p>			

<b>ACTIVITIES</b>		<b>NOTES</b> *	
	<i>Date</i>	<b>Date</b>	<b>Date</b>
<p>10. MCH</p> <ul style="list-style-type: none"> <li>(i) Register and care for pregnant women</li> <li>(ii) Refer abnormal and difficult cases</li> <li>(iii) Conduct deliveries</li> <li>(iv) Supervise deliveries conducted by dais</li> <li>(v) Make post-natal house visits</li> <li>(vi) Monitor child growth and development</li> <li>(vii) Assist in MCH clinics</li> <li>(viii) Educate mother about MCH topics</li> </ul> <p>11. Sub-centre management</p> <ul style="list-style-type: none"> <li>(i) Drugs and supplies</li> <li>(ii) Maintenance of equipment</li> <li>(iii) Logistics and communication</li> <li>(iv) Cleanliness of sub-centre</li> <li>(v) Work planning and scheduling</li> <li>(vi) Intersectoral coordination</li> <li>(vii) Community participation</li> </ul>			

\* Number of columns depends on the number of beats made for supervision



## UNIT – III

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### ***MANAGEMENT OF DRUGS, VACCINES AND OTHER SUPPLIES***

#### **LEARNING OBJECTIVES:**

With the help of this unit you should be able to:

- ❑ Describe need for management of drugs and other supplies under RCH.
- ❑ Estimate quantity of drugs and vaccines required for your PHC.
- ❑ Procure drugs, vaccines and other material in right quantity and at right time.
- ❑ Store drugs, vaccines and other materials properly till their utilisation (issue these to Sub-centres and for use at PHC).
- ❑ Maintain all types of consumable (expendable) and capital (non-expendable) materials & equipments.
- ❑ Maintain stock register for all items supplied to PHC and issued to Sub-centres.

#### **CONTENTS:**

- ❑ Estimation of vaccines requirement.
- ❑ Estimation of drugs and other material required at PHC.
- ❑ Procurement of drugs and vaccines from district level store.

- ❑ Proper storage of drugs, vaccines and other materials and judicious use of drugs and vaccines.
- ❑ Maintenance of equipments provided at PHC including vehicle.
- ❑ Maintenance of stock registers.

### **3.1 INTRODUCTION:**

The aim of material management is to maximise the availability of material of right quality in right quantity at right time at the right place for accomplishing the objectives of an organisation. Therefore, material management for a PHC is to develop a system of supplies which will ensure right quantity and quality of stock of items properly stored and distributed for usage at PHC and sub-centres. This system consists of the following components:

1. Material planning & estimation of right quantity.
2. Procurement of estimated demand for material
3. Storage of the material.
4. Issue from store for use.
5. Maintenance

Under RCH Programmes, it is expected that the demand estimation be prepared at subcentre level and PHC level based on identified service needs and submitted to the district level for supply. The regular supply is provided on quarterly basis to both PHC and the sub-centres.

Requirement of vaccines, drugs and materials will be dependent on the workload or services provided at PHC and at sub-centres functioning within its jurisdiction. Since there are no fixed targets imposed from the higher levels, each health worker at sub-centre level is expected to estimate service needs of the RCH Programme for community members of the catering area of the sub-centre and prepare an estimation of required vaccines, drugs and materials. You, as the Medical Officer I/C of PHC will have to compile the requirement of all the sub-centres and prepare an

estimation of requirement for the services to be provided at PHC by the PHC Staff.

Categories of Materials Supplied at PHC Level are as follows:

1. Drugs & Vaccines
2. Medical Supplies & Family Planning Supplies
3. Non-medical Supplies
4. Equipment and Instruments
5. Facilities

You will have to procure the required materials and supply to each sub-centre according to its estimated requirement submitted as Annual Action Plan. The total Annual requirement of the PHC will be reflected in the Annual Action Plan of the PHC and Submitted to District Medical/Health Officer Incharge.

Estimation of some of the vaccines, drugs and material is discussed in this module.

### **3.2 ESTIMATION OF VACCINE REQUIREMENT:**

The requirement of vaccines at PHC is the total of:

- Vaccine requirement for all the Sub-centres
- Vaccine requirement for the immunization sessions conducted at PHC.

For calculating vaccine requirement, the following factors should be considered:

- Number of beneficiaries
- Number of doses of each vaccine
- Wastage and multiplication factor
- Number of sessions.

You should ensure that each Health Worker works out the vaccine requirement based on these factors. You should verify the

estimated requirement of various types of vaccines as worked out by the Health Worker with the calculations arrived at by using demographic data (use your district demographic data) and then finalise along with the Health Worker keeping in view the total requirement of area, past performance and local situation.

**For example:** For each Sub-centre catering to 5000 population and having birth rate of 30 per 1000.

$$\frac{(5000 \times 30)}{1000} = 150 + 10\% \text{ for pregnancy wastage i.e. } 150 + 15 = 165$$

If the number of pregnant mothers at the sub-centre = 165, then  
requirement of T.T doses - 330 (approx.)  
(2 doses of Tetanus Toxoid for each pregnant mother)

(If the total number of live births are 150 then out of 150 live births, the no. of infants who would probably die before one year of age

$$= \frac{150 \times 75}{1000} = 11 \text{ (approx.) [If the IMR is 75/1000 live births]}$$

Hence, no. of infants alive at 1 yr. of age =  $150 - 11 = 139$

OPV and DPT doses to be administered (4 doses for each child) =  
 $139 \times 4 = 556$

OPV, DPT doses required =  $556 \times 1.33 = 740$  (Approx.)

(Wastage multiplication factor = 1.33)

BCG/Measles doses to be administered = 139  
Therefore BCG/Measles doses required =  $139 \times 2 = 278$   
(Wastage Multiplication Factor = 2)

**The vaccines are supplied in 5, 10 or 20 dose vials or ampoules. To calculate the number of vials required, number of doses are divided by 5, 10 or 20 and rounded off to the next 5, 10 or 20 as per the**



**number of doses per vial. The quantities thus calculated would be for the whole year.**

**However, the requirement may increase, as all immunization sessions are to be provided with vial of each vaccine.**

The calculation for vaccine requirement will have to be done on the basis of number of sessions planned for each month. With more number of sessions additional vaccines would be required as for each sessions a new vial is required to be used.

For calculation for vaccine requirement for your PHC, add up the requirement estimated by all the sub-centres and the vaccine requirement for the immunization sessions to be conducted at PHC.

Vaccine requirement for immunization sessions to be conducted at PHC may be estimated based on past performance of these sessions during last year. Calculate the average requirement of each vaccine for one session and estimate the monthly requirement based on members of sessions planned for each month.

### **3.3 ESTIMATION OF VIT A CONCENTRATED SOLUTION**

All children below 1 year of age will require 1 dose of 1 lakh unit.

All children between 1 to 3 years of age will require 4 doses each of 2 lakh unit.

Therefore the total requirement of doses will be — 139 doses of 1 lakh unit & 1044 doses of 2 lakh unit.

(If number of children below 1 year of age =139 and between 1 to 3 years of age =261)

Allow 20% wastage, which comes to 28 doses of 1 lakh unit and 125 doses of 2 lakh unit.

Hence demand for  $139 + 28 = 167$  doses of 1 lakh unit,  $622 + 125 = 747$  doses of 2 lakh unit.

### **3.4 IRON AND FOLIC ACID TABLETS:**

#### **3.4.1 For Pregnant mothers:**

Number of Pregnant mothers registered — 165

100 Tablets for each mother — 16500 tablets (for prophylaxis)

50 per cent of the mothers expected to be anaemic and would need double the dose i.e. 100 additional for each.

$$\frac{50}{100} \times 165 = 82.5$$

Additional requirement will be =  $82.5 \times 100 = 8250$

Hence, the total requirement of Iron and Folic Acid Tablets would be:  $16,500 + 8,250 = 24,750$  tablets

In case you require more iron and folic acid tablets for some of the IUD, MTP and Tubectomy cases, indent this extra requirement from the District/CMO office.

#### **3.4.2 Iron and Folic Acid (small) for children:**

IFA small tablets are meant for children between the age of 1 to 5 years, who show visible signs of anaemia. Each child is to be given 1 tablet/day for 100 days.

- a. If the number of children ( 1 to 5 years ) is 500 (approx.)
- b. Number expected to show visible signs of anaemia (50%) = 250
- c. Requirement of IFA (small) is  $(250 \times 100) = 25,000$ .

#### **3.4.3 ORS Packets:**

A child under 5 years of age suffers on an average 3 episodes of diarrhoea every year. Thus, there will be  $650 \times 3 = 1950$  episodes of diarrhoea every year in a sub-centre area. [If Number of children below 5 years of age = 650]. One packet of ORS is required

for each episode. That means 1950 packets will be required for these children. However 10% of these episodes are with dehydration which would require an additional packet of ORS. That means 195 episodes (10% of 1950 episodes) will require 195 more ORS packets. Thus, the total requirement of ORS packets in every year will be:  $1950 + 195 = 2145$  packets

However, all the children may not report for each episode. In view of the past performance, MOHFW supplies a certain quantity. In case you fall short, you can always ask for more packets from PHC. Sudden increase in reporting and consumption of ORS packets is an alarming sign to you for anticipating epidemics of diarrhoeal diseases.

#### **3.4.4 Cotrimoxazole Tablets (Paediatric):**

The total episodes of Acute Respiratory Infection (ARI) at the rate of 3 episodes per child under 5 years in a year would be equal to diarrhoeal episodes of 1950 cases as calculated above. Only 10 per cent of the episodes of ARI are pneumonia requiring antibiotic therapy. Thus 195 episodes of pneumonia will on an average need 20 tablets of cotrimoxazole (paediatric) each. Hence, the total annual requirement of cotrimoxazole would be  $195 \times 20 = 3900$  tablets. It would be desirable to compare all these estimates with the estimates and actual use of the last year and verify whether the same has increased by 5 per cent to 25 per cent or not.

Collect all the action plans prepared by each subcentre, note down this entire requirement, add these up with the estimated requirement for the sessions to be conducted at PHC. This will be the total vaccine and drugs requirement for your PHC.

Since, existing practices are changed. You have to give quantity of each material/supply used in previous year, the amount/quantity available in stock and the amount required for the next year.



### **3.5 PROCUREMENT:**

This means indenting from District level or CMO office. Having prepared the total requirement, the next step is to Fill the Action Plan Form (Form 2) along with the Materials & supplies required.

Submit this to your District Level Officer-in-charge from where you will receive the supply. You must ensure that the supplies sent from district office are physically verified, checked and then received at PHC.

Lead-time is the time lag between the placement of an order and getting supply of the same order. Hence the time lag between submission of your annual action plan along with estimation of material requirement and supply of these will be referred as lead time for PHC supplies. You may receive your supply in 4 instalments on quarterly basis. However, if you exhaust your stock, you may ask for replenishment earlier.

### **3.6 STORAGE:**

Materials after being inspected and received, are stored in store-room till its consumption. It is usually specified if the materials need to be stored at particular temperature. You must store those material at 2 °C – 8 °C which need to be stored at low temperature, others you can store at room temperature. You try to arrange the supplies on racks with both front and backsides are open, so that you can fill this rack from back side and take out from front side. This will help you in maintaining the principles of FIFO (First-In-First Out) for use of those materials first which are received earlier and avoid getting material old, stale and even expired.

The stock of usable material is also referred to as Inventory. *Inventory control* is one of your major responsibilities in materials management. The aim of Inventory Control is to avoid getting 'out of stock' situation. There are various methods and techniques for inventory control; which may not be applicable to your situation.



However, you can use 'Two Bin' method and maintain 'Buffer stock' for proper inventory control and maintenance of emergency stock.

### **3.6.1 Two-Bin Method:**

In this method, the entire stock is separated in two boxes. One box contains the main stock and the other holds the quantity required during the lead-time. As soon as the main box gets empty another order should be placed for replenishment.

In many PHCs it is practiced to issue a substock for a week or month from the main stock to the pharmacist who maintains the daily consumption of each item. Based on this, average daily consumption is easily estimated which determines the quantity required during lead-time. This much should be kept separately in the second box.

**MAINTAIN THE PRINCIPLES OF FIRST-  
IN-FIRST-OUT (FIFO) FOR ISSUING  
MATERIAL FROM STORE**

### **3.6.2 Buffer Stock:**

Buffer stock is the emergency stock for meeting demand during unforeseen situations resulting from either sudden increase in consumption of a particular material/drug or under extension of lead time i.e. failure of timely supply.

For maintaining Buffer Stock — identify those items which you consider very crucial for providing RCH services and keep about 10% of the total requirement of these items as Buffer Stock whereas for the rest of the items, 5% of the local stock is adequate as Buffer Stock.

**MAINTAIN BUFFER STOCK OF EMERGENCY AND  
CRUCIAL DRUGS TO AVOID STOCK-OUT POSITION**

**3.6.3 Storage of vaccines:**

Guidelines for optimal storing of vaccines in Refrigerator at PHC:

1. Minimum stock (not more than 1 month requirement) of vaccines should be kept in the fridge at a time.
2. Do not keep any vaccine in door panel.
3. You should never keep DPT, DT, Typhoid in the freezer chamber of the refrigerator. These should be kept in lower compartments.
4. You should keep the OPV vial, which is in current use in central compartment of the refrigerator to avoid repeated freezing and thawing. You should store those OPV vials, which are not in use in the freezer chamber or in the chamber closest to it.
5. You can also store the BCG and Measles vaccine in either the freezer or the shelf nearest to the freezer.
6. You should always transfer the vaccines in cold box/vaccine carriers containing ice packs during defrosting of the refrigerator.
7. The refrigerator should be used exclusively for storing vaccines only as far as possible.
8. During an immunization session at PHC, which may last, for long duration, Vials of vaccines taken out of refrigerator should be kept in a cup/box containing ice cubes.

**SUPPLY VACCINES TO SUB-CENTRE  
ONLY ON THE DAY OF USE**

**NOTE:** Vaccines are not expected to be stored at Sub-Centres.

**RECOMMENDED TEMPERATURE FOR STORAGE OF VACCINES**

SL. NO	VACCINE	TEMPERATURE IN °C	DURATION FOR WHICH VACCINE REMAINS POTENT FROM THE DATE OF MANUFACTURE	REMARKS
1	ORAL POLIO	< 2 °C	1 YEAR	AVOID REPEATED THAWING. KEEP ON ICE WHILE USING.
		2 °C to 10 °C	3 MONTHS	
2	MEASLES	0 °C to 2 °C	2 YEARS	
3	BCG	4 °C to 8 °C	1 YEAR	USE WITHIN 3 HOURS OF DISSOLVING
4	DPT (DUAL ANTIGEN)	4 °C to 10 °C	2 YEARS	MUST NOT BE FREEZED.
5	DPT (TRIPLE ANTIGEN)	4 °C to 10 °C	1 + YEAR	MUST NOT BE FREEZED
6	TYPHOID	4 °C to 10 °C	1 + YEAR	MUST NOT BE FREEZED
7	TETANUS TOXOID	4 °C to 8 °C	1 + YEAR	MUST NOT BE FREEZED

**DO NOT STOCK VACCINES FOR  
MORE THAN ONE MONTH  
REQUIREMENT**

**3.7 ISSUE/DISTRIBUTION OF DRUGS/VACCINES PROCEDURE:**

You, as Incharge of PHC, have to provide supplies to all the sub-centres under your control. You will receive these supplies from District Level Officer incharge and supply to sub-centres on quarterly basis, replenishment if needed would be made even earlier. You



must ensure that there is always stock for one or two months at each sub-centre. If you find larger quantity of stock at any sub-centre then take it for either over-indenting or non-performance or under utilisation of services. In that case you have to crosscheck with other register maintained for various services provided.

The lists of drugs and equipment provided at PHC and sub-centre under RCH are placed at the end of this unit.

### **3.7.1 Maintain a stock register:**

Maintain Stock Register by making entries with dates of supplies received/procured from the district level office. The quantity issued to the pharmacist for monthly use must be entered in this main stock register. The pharmacist must be instructed to maintain a separate register for entering daily use of each drug. If you are issuing any drug or material to any sub-centre from your main stock before the scheduled quarterly replenishment then this quantity must be entered in the main stock register.

At the end of each month you must check the balance and compare it with the usage by way of physical verification.

### **3.8 MANAGING EQUIPMENT:**

There are two types of equipment and materials supplied to PHC for providing services. These are consumable or expendable and capital or non-expendable. Consumable equipment is that which is used within a short time. These are also called as recurring equipment or material. Non expendable or capital equipment is such equipment, which lasts for several years and used repeatedly. These are also known as non-recurring equipment. These need care and maintenance for extending its use for long time. For example – Furniture, Refrigerator, Ice-lined Refrigerator (ILR), vaccine carrier, weighing scale, sphygmomanometer, instruments, vehicle etc. Consumable equipment includes material like cotton, gauge, bandage, chemicals, syringe, needles, etc. The management of



these including estimation of each item required, placing an indent and procuring that from District Head Quarter, and proper storage is equally important as of drugs.

Hence, you have to prepare an estimation of each item based on services planned for the coming year. You must compare this estimation with the consumption during previous year and ensure that it is at least 10% higher than that.

These items are usually supplied quarterly or on half yearly basis. However, you can get replenishment earlier if your stock gets exhausted. Try to ensure economic use of material to avoid wastage or over use and establish a control mechanism to prevent pilferage.

### **3.8.1 Storage of Equipments:**

Equipment is stored in two places:

- A main or reserve store - (Stock of usable but idle items (i.e. the items waiting to be used).
- At the place of use.

The new items of equipment are received and stored in main store.

### **3.8.2 Receiving new items of equipment (Non-expendable/capital):**

A new item is usually delivered along with a document of specifications of the equipment. Since you get the new items delivered from District Head Quarter, you usually do not have to make the payment which is done at the place of purchase. Some of the equipment will be centrally purchased at Centre or State Government Level and supplied to you through District Level Authority. You only have to ensure that you are provided with the right type of equipment and it is in functional condition.

**PHYSICAL VERIFICATION AT THE TIME  
OF RECEIVING THE NEW EQUIPMENT IS  
VERY IMPORTANT AND ESSENTIAL FOR  
YOU**

After receiving the equipment, enter it in the stock-book or ledger, which usually has a separate page for each item. Ensure that the following items of information are entered in the ledger:

- The date of receipt of the item.
- The reference number of the item
- The quantity of items received.

When you issue an item for use subtract it from the stock and calculate the balance remaining in the stock. When the balance reaches to a certain point of quantity, it indicates that it is time to order for replenishment. This order is referred as Re-order level. For each item, you must have the re-order level indicated to help you to prevent 'stock out' position.

### **3.8.3 Controlling and Maintaining equipment:**

As mentioned earlier recurring/consumable items must be used economically to avoid wastage to the possible extent. You must establish a system, which will help you in avoiding wastage of consumable items and maintaining capital or non-expendable items in good working conditions.

You need to practice the following skills:

- a. Convincing staff of the importance of maintenance, so that they realise that equipment must be cleaned, inspected and kept in good order. They should report

defects immediately as soon as noticed and they must return the equipment to its correct place after use.

- b. Using of inspection checklist and inspection schedule. You must inspect the equipment by checking using checklist what is present and compare with the stock position. Inspection schedule is prepared based on frequency of checking needed. How often you should check an item depends on whether it is consumable or non-consumable. Consumable items need to be checked more frequently than non-consumable items like Furniture, Refrigerator etc. However, non-consumable but delicate items which are liable to breakdown easily like Sphygmomanometer, electric sterilizers, microscopes etc need regular and more frequent check ups. In order to avoid missing this task, you must prepare an inspection schedule and fix up day/date and time for checking up of the equipment.
- c. Detecting and interpreting discrepancies: Discrepancy means difference between what is expected to be there and what is actually there. The difference between the amount of a consumable items used and the amount normally is expected to be used or a difference between the equipment entered in the inventory ledger and the equipment actually present must be detected and reasons identified for taking appropriate actions.
- d. Demonstration of handling & functioning of the existing and new equipments received.

**DETECT DISCREPANCIES, FIND  
THE CAUSE OF DISCREPANCY  
AND TAKE APPROPRIATE ACTION**

### **3.8.4 Maintenance of some important equipment:**

**Equipments for Cold Chain:** Required for prevention of deterioration of vaccine.

The equipment used for maintenance of cold chain for vaccines is considered an important equipment for PHC as well as sub-centre.

At sub-centre level, since no vaccine has to be stored, only 'vaccine carrier' and or 'Day carriers' are used. For storage of vaccine at PHC level the following equipment are provided which need to be maintained and properly used.

- a. Ice-lined Refrigerator (ILR)
- b. Deep Freezer
- c. Cold Box.

#### **3.8.4.1 Ice Lined Refrigerator:**

ILRs are top opening refrigerators. Under the National immunization programme, two types are in use, one with ice tubes and the other with ice packs as the ice lining. These act as a buffer in case of power failure by preventing a rise in temperature inside the refrigerator.

The bottom of these refrigerators is the coldest place. DPT, DT and TT vaccines should not be kept directly on the floor of the refrigerators as they can freeze and get damaged.

**KEEP BCG, DPT, DT AND TT  
VACCINES IN THE BASKET  
PROVIDED WITH THE  
REFRIGERATOR**



Keep the dial thermometer inside the ILR to record the daily temperature even if there is an in-built thermometer.

There is **NO FREEZER COMPARTMENT IN THE ILRs**. You cannot freeze ice packs or ice in the ILRs.

The Electrolux type of ILR can also be used as a deep freezer also by changing the switch to the appropriate position. [There is no such arrangement in Vestforst ILR. In case of Vestforst, a Deep Freezer is supplied separately.] In an emergency, if you wish to prepare ice packs in these ILRs, you must switch it on to work as a freezer. But before you do this be sure that you have transferred DPT, DT, TT and other vaccines that are damageable at sub-zero temperature to another refrigerator or to an already prepared Cold Box. The Cold Box must have the required number of solidly frozen ice-packs and the vaccines should be in polythene/cardboard boxes before transfer.

Ordinarily, ILRs must be used only as a refrigerator for storing vaccines even when there is another refrigerator in your PHC. The risk of cold chain failure is far less in an ILR than in a conventional refrigerator specially where there are periodic power failure. However, in some PHCs where the ILR has not been supplied as yet, the vaccines may be stored in a conventional refrigerator till an ILR is received.

## THE DO's AND DON'Ts FOR USE OF ILR/FREEZER

*Exhibit 3.2*

### DOs

- Keep the equipment in a cool room away from direct sunlight and at least 10 cms away from the wall.
- Keep the equipment level.
- Fix the plug permanently to the socket.
- Use voltage stabilizer.
- Keep the vaccines neatly with space between the stacks for circulation of air.
- Keep the equipment locked and open it only when necessary.
- Defrost periodically (detailed subsequently).
- Check the temperature twice a day and maintain a record which should be supervised regularly.
- Take remedial action if the temperature is not maintained within the prescribed limit.
- Outside the equipment paste a notice that helps the user during a break down

whom to contact and where to check for a blown fuse.

Alternate place for vaccine storage.

**DONTs**

- Do not keep drugs
- Do not open the door/top unless necessary.
- Do not keep food or drinking water in the refrigerator.
- Do not keep anything for more than one month time in the refrigerator.
- Do not keep more than one month's requirements.
- Do not keep vaccines which are expired.

**FOLLOW FIRST-IN-FIRST-OUT-RULE**

Vaccines with an early expiry date or received earlier should be used first.

**ILR/FREEZER CHECK LIST FOR PREVENTIVE MAINTENANCE**

<b>a. External</b>	<b>Remarks</b>
<ol style="list-style-type: none"> <li>1. The exterior is clean.</li> <li>2. It is firm on the floor</li> <li>3. It is properly leveled</li> <li>4. Its sides are minimum 10 cm away from any wall or object.</li> <li>5. The room is well ventilated.</li> <li>6. Lid is kept locked</li> <li>7. Keys kept at easily available place.</li> </ol>	
<p style="text-align: center;"><b>b. Internal</b></p> <ol style="list-style-type: none"> <li>1. Lid seals properly without gap</li> <li>2. Lid seal is clean</li> <li>3. Ice-lining tubes/ice packs are in proper position (for ILR only).</li> <li>4. Ice lining tubes/ice packs filled to proper level (no leak).</li> <li>5. Thickness of frost formation is not more than 6 mm</li> <li>6. Vaccines preserved in neat rows.</li> <li>7. There is space between rows for air circulation.</li> <li>8. DPT and TT vaccines are kept in the basket and not touching any cooling surface (for ILRs only).</li> <li>9. Separate dial/stem thermometer kept among the vaccine.</li> <li>10. Reading of dial/stem thermometer.</li> </ol>	



c. Technical	Remarks
<ol style="list-style-type: none"> <li>1. Reading on the built-in thermometer of the equipment.</li> <li>2. Thermostat setting.</li> <li>3. Temperature indicated is within specified range. (if not, adjust thermostat to obtain steady temperature within specified limits. Note : Present thermostat setting</li> <li>4. Voltage stabilizer connected.</li> <li>5. Input voltage reading _____ volts.</li> <li>6. Output voltage reading _____ volts.</li> <li>7. Plug of voltage stabilizer fits properly and not loose on the power socket.</li> <li>8. Connections of equipment to voltage stabilizer proper and not loose.</li> <li>9. Compressor compartment and the components inside are clean.</li> <li>10. Electrical connections are proper</li> <li>11. No abnormal noise</li> <li>12. Cooling fan (if any) works properly.</li> <li>13. Compressor and fan mounting bolts are tight.</li> <li>14. Pipe or components are not out of position and not touching others</li> <li>15. Temperature recorded is minimum twice a day.</li> </ol>	

**NOTE: FOR ANY 'NEGATIVE' ANSWER, TAKE ACTION.**

### **3.8.4.2 Deep Freezer**

It is also a top opening equipment. It is to be used for storing polio and measles vaccine and freezing of ice-packs. A pair of Deep Freezer (140 litre) and a Vestforst ILR (140 litre) is connected to a common voltage stabilizer. Do not store BCG and T series vaccines in the deep freezer.

#### **Defrosting and cleaning:**

The temperature in the ILR/Freezer can rise if there is a thick layer of ice around the freezer or along the walls and bottom of ILRs. It is therefore necessary to defrost them periodically. This should be done if the ice in the freezer is more than 6 mm thick.

As a supervisor, you have to ensure that the Deep Freezers/ILRs are regularly defrosted and cleaned. The following points should be observed:

- Power supply needs to be switched off and the plug removed from the wall socket
- Vaccines need to be transferred to the Cold Box (or another ILR) for temporary storage. In case of Freezer, take the frozen ice-packs out and keep them in a cold box or close together.
- Open the defrost water outlet plug at the bottom of the cabinet. Keep a suitable container under the drain hose to collect the defrost water.
- Keep the lid open and allow the frost to melt completely. Never use any heat source other than warm water to speed up defrosting. Never use any sharp edged instrument for removing frost or for cleaning.
- Wash all parts inside the cabinet with warm water and mild detergent, wipe it dry with clean cloth. Never use any strong detergent or rubber reactive material for cleaning the rubber seal.

- Allow the cleaned parts to dry completely. Rest the drain outlet plug at its position at the bottom, close the lid. Connect the power supply plug to the wall socket.
- Turn the thermostat knob to right (clockwise) to maximum position. Observe the temperature and reset.

**THE LID OF A FREEZER/ILR MAY BE  
STUCK IMMEDIATELY AFTER CLOSURE FOR A  
FEW MINUTES DUE TO NEGATIVE  
PRESSURE. DO NOT FORCE OPEN THE LID.  
WAIT FOR A FEW MINUTES AND TRY AGAIN.  
LID WILL OPEN EASILY.**

### **3.8.4.3 COLD BOXES**

Cold boxes are big insulated boxes. They come in two sizes, 5 litres and 20 liters. They are supplied with requisite number of ice packs. The 5 litre cold box can hold one month vaccine supplies of a PHC of 30,000 population. 20 litre cold box has enough space to transport one month supply of health centre catering for one lakh population.

#### **USES:**

- Collect large quantities of vaccines.
- Transport large quantities of vaccine by vehicle to outreach sites.
- Store vaccines for transfer upto five days, if necessary for outreach session or when there is power cut. The hold over time is more than 90 hours at + 43°C ambient temperature. You can also store vaccines in it while ice packs are being prepared in Electrolux ILR on Freezer mode.
- Store vaccine in case of breakdown of ILR.



## **TO PACK:**

- Place fully frozen ice packs side by side against the inside walls and floor of the cold box.
- Stock vaccine and diluent in the box.
- Place packing material between DPT/DT/TT vaccine and the ice pack to prevent vaccine from becoming frozen.
- Place ice packs over the top of the vaccine and diluent.
- Secure the lid tightly.

## **TO KEEP IN GOOD CONDITION WHEN NOT IN USE:**

- Clean and dry after every use.
- Examine inside and outside surfaces after every use for cracks.
- Check that the rubber seal around the lid is not broken; if broken, replace immediately.
- Adjust the tension on the latches so that the lid closes tightly.
- Lubricate hinges and locks routinely.

## **3.9 COLD CHAIN EQUIPMENT AT SUB-CENTRE:**

### **3.9.1 Vaccine Carriers:**

You can use 'vaccine carriers' for carrying small quantity of vaccines (i.e., 16-20 vials) to the area and its subcentre villages. The vaccine carriers are made of insulated material. The ice packs for lining the sides of the carrier should be fully frozen and the lid of carrier should be closed tightly. The vials of DPT, DT and TT vaccines should not be in direct contact with the frozen ice packs. Before using or packing the vaccines in the Vaccine Carrier the precautions that need to be observed are as follows:

- Take out vaccine carriers and confirm that there are no cracks in its body.
- Take out the required number of ice packs and wipe them dry.
- Place fully frozen ice packs in the carrier and wait for few minutes for temperature to fall to less than 8 degree celsius.
- Put vaccine vials and ampoules in a polythene bag and close it.



- Stock vaccines and diluent in the carrier.
- Place some packing material between DPT vaccine and the ice to prevent them from touching the ice packs.
- Close the lid tightly.

### **How to keep vaccine carriers in good condition when not in use:**

Some of the tips to this effect are mentioned below:

- Clean and dry inner side of carrier after use.
- Examine the carrier both from inside and outside each after each use for any cracks.
- Keep the carrier away from direct sunlight and other sources of sunlight, as this may cause the plastic to crack.
- Do not sit or place anything heavy on a vaccine carrier.
- The carriers with four ice packs can keep the vaccines cold for 2 days provided the ice-packs used are fully frozen and the lid of carrier is kept closed tightly.

### **3.10 OTHER EQUIPMENT:**

#### **3.10.1 Blood Pressure Apparatus:**

A Blood Pressure Apparatus (Aneroid or Sphygmomanometer) has been provided to all subcentres. The Female Health Worker must make use of it for checking B.P. during antenatal check ups in antenatal clinics. She may also carry this instrument during home visit for follow up of suspected high risk cases.

The B.P. Instrument along with the stethoscope should be kept in the cupboard free from dust and sunlight. Ensure that while packing, the Health Worker or whoever uses, takes care that cuff is properly deflated and then folded and the rubber tube is not kinked. You must ensure that, while taking out from the bag, she must hold the Dial to prevent it from falling and getting damaged. When not used for a long time the rubber tube and the cuff may start softening, particularly in summer and get leaked. You must check this frequently so as to keep instrument worthy of use.

### **3.10.2      Weighing Scale:**

A weighing scale for adult and a spring balance for babies are provided to all sub-centres and primary health centres. Ensure that these equipments are maintained properly by the Health Worker at Sub Centre and PHC. The weighing scales must be kept in the cupboard. She must periodically check the same for error by weighing a known weight (Measure). Teach her that she takes adequate precautions to ensure that the spring balance does not get rusted.

### **3.10.3      M.T.P. Equipment and Suction Machine:**

You will receive supply of M.T.P. equipment along with suction machine under RCH programme. Ensure that these equipments are properly cleaned and sterilised before use and decontaminated, cleaned and dried after use. Must ensure that the Suction machine is in working order. The District level officer in charge may get into contract for regular maintenance and repair of such equipment provided at PHCs. Ensure that you get this facility for your PHC equipment.

Similarly for other instruments including IUD insertion kit, ensure that regular cleaning, sterilization before use and decontamination, cleaning after use is done.

### **3.10.4      Syringes:**

Glass syringes need careful handling. You must instruct all staff to keep this in their mind. Glass syringes should be properly cleaned in running water and then sterilized (Piston and Barrel separately) before use. Staff handling sterile syringes must use sterilised Cheatele Forceps. Decontamination (Procedure detailed in Maternal Health Component) after use must be ensured, then cleaned, dried and stored.

Disposable, pre sterilized packed syringes must be handled following aseptic technique. These should also be decontaminated after use and then destroyed before disposal.

### **KEY POINTS**

- Estimate the quantity of drugs and vaccines based on estimated quantity of services to be provided/rendered at each subcentre level and at PHC level.
- Do not stock vaccines for more than one-month requirement.
- Arrange your store in such a way that it helps you in maintaining the principles of FIFO.
- Maintain Two Bin Method or arrange items in two different shelves to maintain reorder level.
- Maintain Buffer Stock of emergency drugs to avoid stock out positions.
- Maintain non-consumable/non recurring equipment in good condition for longer use.
- Maintain stock register for each item of material and equipment.
- Try to avoid over use, misuse and pilferage of material.

## SUB-CENTRE KIT

### CONTENTS OF DRUG KIT A

Sr. No.	Name of the Item	Quantity
1.	Oral Rehydration Salt (O.R.S.)	150 packets
2.	Tablet I.F.A. (large)	15000 tablets
3.	Tablet I.F.A. (small)	13000 tablets
4.	Vitamin A solution	6 bottles of 100 ml. each
5.	Tablet Cotrimoxazole (Paediatric)	1000 tablets

**Source:** RCH Programme- Schemes for implementation.



## CONTENTS OF DRUG KIT B

Sr. No.	Name of the Item	Quantity
1.	Tab. Methylergometrine Maleate (0.125 mg.)	500 tablets
2.	Tablet Paracetamol (500 mg.)	500 tablets
3.	Inj. Methylergometrine Maleate [0.2 mg/ml., 1ml. ampoule (for I.M. use) in light resistant amber colour ampoules)	10 ampoule
4.	Tab. Mebendazole 100 mg.	300 tablets
5.	Dicyclomine Hcl 10 mg.	250 tablets
6.	Chloramphenicol Eye Ointment 1% w/w in applicaps. Each applicab to contain 250 mg. of ointment	500 applicap
7.	Ointment Povindone Iodine 5%	5 Tubes
8.	Cetrimide Powder	125 gm.
9.	Absorbent Cotton	1 roll
10.	Cotton Bandage (4 cm width x 4 metres length)	120 rolls

**Source :** RCH Programme – Schemes for implementation, Department of Family Welfare, MOHFW.

**LIST OF EQUIPMENT KITS  
A MIDWIFERY KIT A.N.M.**

Sr. No.	Item Description	Qty.
1.	Sphygmomanometer, aneroid, 300 mm with cuff	1
2.	Scale, weighing,(baby) hanging type, colour coded, 5 kg.	1
3.	Steriliser Instrument, 222 x 82 x 41 mm. Stainless steel	1
4.	Forceps, spring-type, dressing 160 mm, stainless steel	1
5.	Basin, Kidney, 825 ml., stainless steel	1
6.	Bowl, sponge set of two sizes, 600 ml 1200 ml-SS	1
7.	Catheter, urethral, 12 fr, rubber	1
8.	Sheeting clear, vinyl plastic, 910 mm wide x 180 mm	1
9.	Can, enema with tubing and clip	2
10.	Thermometer, clinical, oral dual scale, celsius/fahrenheit	1
11.	Thermometer, clinical, rectal dual celsius/fahrenheit	1
12.	Brush, hand, surgeon's with white nylon bristles	1
13.	Mucus extractor	1
14.	Forceps, artery, straight, pean 160mm, stainless steel	2
15.	Scissors, cord cutting, busch, curved on flat, 160 mm-SS	1
16.	Tape, umbilical non-sterile, 3 mm wide x 25 m spool	1
17.	Nail clipper/file	1
18.	Foethoscope (Stethoscope Foetal)	1
19.	Bag, multipurpose, vinyl, for midwifery kit	1

**Source:** RCH Programme- Schemes for implementation, Deptt. Of Family Welfare, MOHFW.

## SUB-CENTRE EQUIPMENT KIT

Item description	Qty./Kit	Item description	Qty./Kit
Kit C-sub-Centres			
Basin KIDNEY 825 ML(28 OZ)	2EA	BASIN SOLUTION DEEP	1EA
STAINLESS STEEL, REF IS:3992		APPROX. 6 LITRES SS REF IS : 5764	
TRAY INSTRUMENT/DRESSING W/COVER 310X195X6 MM SS,	1EA	BRUSH SURGEONS WHITE NYLON BRISTLES	2EA
FLASHLIGHT BOX-TYPE PRE- FOCUSED 4 CELL	1EA	SPHYGMOMANOMETER ANEROID 300 MM WITH CUFF IS : 7652	1EA
JAR DRESSING W/COVER 0.945 LITER STAINLESS STEEL.	1EA	RACK BLOOD-SEDIMENTATION WESTERGREN 6-UNIT	1EA
HEMOGLOBINOMETER-SET SAHL 1 TYPE COMPLETE	1EA	BATTERY DRY CELL 1.5, 'D' TYPE FOR ITEM 10C	4EA
SCALE BATHROOM METRIC/ AVOIRDUPOIS 125 KG/280 1B	1EA	SCALE, INFANT METRIC	1EA
SHEETING PLASTIC CLEAR PVC CM X 180 CM	2 EA	LANCET SS (MAGEDORN NEEDLE) 75 MM PKT OF 6	1EA
FORCEPS TISSUE-160 MM	1EA	FORCEPS HEMOSTAT STRAIGHT KELLY 140MM SS	1EA
FORCEPS STERILIZER (UTILITY) 200 VAUGHM SS	1EA	FORCEPS UTERINE VULSELLUM CURVED 25.5 CM	1EA
SCISSORS SURGICAL STRAIGHT 140MM S/B, SS	1EA	REAGENT STRIPS FOR URINE TEST	1EA
REAGENT STRIPS FOR URINE TEST	1EA	SPECULUM VAGINAL BI-VALVE CUSCO'S/GRAVES MEDIUM	1EA
SIMS UTERINE DEPRESSOR/RETRACTOR	1EA	SPECULUM VAG'NAL DOUBLE - ENDED SIMS : ISS MEDIUM	1EA
MEASURE 1 LITRE JUG-SS	1EA	MEASURE ½ LITRE JUG-SS SOUND, UTERINE, GRADUATED)	1EA 1EA



## PRIMARY HEALTH CENTRE EQUIPMENT

KIT D.PRIMARY HEALTH CENTRES			
BASIN, KIDNEY 825 ML (28 OZ) STAINLESS, REF : 3992	1E.A	IRRIGATOR 1.5 LTR W/TUBING CLAMP AND STRAIGHT CONNECTOR	1 SET
JAR DRESSING W/COVER 310X195X 36MM S/S, REF IS:3993	1E A	TRAY INSTRUMENT/ DRESSING W/COVER 310X 195X 63 MM S/S, REF IS 3993	1E A
SPHYGMOMANOMETER, ANEROID, 300 MM WITH CUFF, REF IS: 7652	1E A	HEMOGLOBINOMETER SET SAHLI TYPE. COMPLETE	1 SET
MICROSCOPE MONOCULAR W/OIL 1MM OBJ WITH ILLUMINATOR	1E A	RACK BLOOD SEDIMENTATION, WESTERGREN, 6 UNIT	1E A
MUCUS EVACUATOR	1 SET	BATTERY ALKALINE DRY CELL "C" TYPE 1.5 V	2E A
SCALE PHYSICIAN ADULT METRIC 125KGS / 100GMS	1E A	SCALE INFANT METRIC 16 KGS/20 GMS	1E A
REAGENT STRIPS FOR URINE TEST	1 BOT L	SPECULUM NASAL. STAINLESS STEEL	1 SET
CURETTE UTERINE SHARP/BLUNT, BLUKE 270 MM S/S	1E A	FORCEPS HEMOSTAT, STRAIGHT, KELLY 140MM, S/S	1E A
DILATOR UTERINE DOUBLE-ENDED, HEGAL S/S, SET OF 5	1E A	FOREPS SPONGE – HOLDING, STRAIGHT, 228 MM, S/S	1E A
FORCEPS TISSUE, SPRING TYPE 1X2, TEETH 150MM S/S	1E A	FORCEPS TISSUE 4X5 TEETH ALLIS 150MM S/S	1E A
FORCEPS, TONGUE HOLDING, YOUNG 170 MM, SOFT RUBBER JAWS, STAINLESS STEEL	1E A	FORCEPS STERILIZER (UTILITY) 280MM VAUGHAN, S/S	1E A
FORCEPS UTERINE VULSELLUM STRAIGHT JACOBS 250 MM	1E A	KNIFE-HANDLE SURGICAL FOR MINOR SURGERY # 3	1E A



<b>KIT D.PRIMARY HEALTH CENTRES</b>			
KNIFE-HANDLE SURGICAL FOR MAJOR SURGERY # 4	1E A	KNIFE-BLADE SURGICAL FOR MINOR SURGERY # 1 PKT 5	1E A
KNIFE-BLADE FOR MAJOR SURGERY # 22 PK T 5	1 PKT	NEEDLE SUTURE 3/8 CIRCLE CUTTING, ASSORTED	2 PKTS
RETRACTOR VAGINAL SIMS MEDIUM BLADE 31X 80M S/S	1E A	SCISSORS, SURGICAL CURVED, 140 MM SHARP / BLUNT. S/S	1E A
SPECULUM VAGINAL, BI-VALVE CUSCO'S/GRAVES, SMALL	1 EA	SCISSORS SURGICAL, STRAIGHT, 140MM SHARP/BLUNT, S/S	1E A
SPECULUM, VAGINAL, DOUBLE-HANDED SIMS, 165 MM LONG, STAINLESS STEEL	1E A	SPECULUM VAGINAL, BI-VALVE CUSCO' S/GRAVES, MEDIUM	1E A
SOUND UTERINE SIMPSON 300 MM GRADUATED IN 20 MM	1E A	LARYNGOSCOPE FOLDING TYPE MACKINTOSH PATTERN WITH SEPARATELY PACKED BATTERIES	1E A
NEEDLE, SUTURE SURGEON'S, REGULAR 3/8 CIRCLE	1E A	HOLDER, NEEDLE, STRAIGHT, NARROW-JAW MAYO HEGAR, 180MM	1E A
CATHETER, TRACHEAL, DELEE, 16FR, 5/5 MM DIA, 400 MM OPEN TUP WITHOUT EYE, FUNNEL END 6MM, SOFT RUBBER	1E A	PUMP, ASPIRATING, SURGICAL PORTABLE, FLOOR OPERATED	1E A
		CONNECTOR 3-IN-1 FOR 6 TO 8MM NYLON TUBING	1E A



## UNIT - IV

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### ***MANAGEMENT OF CONTINGENCY FUND AT PHC***

#### **LEARNING OBJECTIVES:**

With the help of this unit you should be able to:

- ❑ Prepare financial estimation (Budget) for activities
- ❑ Utilise contingency fund.
- ❑ Keep correct accounts of imprest/contingency fund and expenditure.

#### **CONTENTS:**

- ❑ Types of money/finance involved at PHC
- ❑ Budgeting
- ❑ Utilisation of contingency fund
- ❑ Maintenance of account for contingency fund

#### **4.1 INTRODUCTION:**

Every Government Official is accountable and responsible for proper utilization of government funds authorised by Legislature and show proof of proper use of such expenditure. This accountability is the basis of Financial Management and is ensured at two levels.

1. At the level of Government/ Head of organization/department who have to ensure that the funds provided in the Budget have been utilised for the authorised purpose.
2. At the level of Drawing and Disbursing officers who have to ensure that funds have been utilised in accordance with the rules and regulations (Government Finance Rules) and executives instructions issued by Government from time to time.

Some of the provisions dealing with Financial Management of Government funds you need to follow are given here.

1. Before expenditure, ensure that there is adequate budget allotment.
2. Ensure that you have authority and power for incurring the expenditure for a specific purpose.
3. Follow the prescribed procedure for purchasing equipment/drugs/material etc. from Government fund.
4. Purchase of drugs or other items should be made only when they are actually needed. Purchases should not be made just because funds are available.
5. Ensure that expenditure incurred serves the purpose for which it is intended and it should not become wasteful or purposeless.

#### **4.2 TYPES OF MONEY/FINANCE INVOLVED AT PHC:**

Since money is always a limited resource, it demands not only effective/purposeful expenditure, but also efficient use or economising the expenditure.

**MOST PRODUCTIVE USE OF EACH RUPEE IS THE MOTTO OF  
FINANCIAL MANAGEMENT**



Every government officer is expected to consider the government money as if it is his/her own money while incurring expenditure.

Managing money in health services is complex and responsible work. But the scope of management of financial resource for Medical Officer at PHC is limited, as he/she has been given very little money to handle and limited responsibility for spending money directly.

From an account officer's point of view there are two types of money involved at PHC. These are:

- a) Invisible money or budgetary allocation
- b) Visible money or cash.

#### **4.2.1 Invisible Money:**

The Government allocates an amount for a PHC for specific purposes like money for drugs, for salary of the staff, for vehicle etc. which is not visible in the form of cash is known as Invisible money or Budgetary allocation. At times, You as a Medical Officer at PHC, may be informed about the budgetary allocation for drugs or material or equipments and are asked to prepare estimation for requirement within this amount of allocation which is known as resource based budgeting.

#### **4.2.2 Visible Money:**

A small amount of money is advanced to PHC for certain works needed for provision of the health services, and is known as visible money. This visible money is usually small in amount and is called petty cash. This amount may be given to you as Imprest money or Grant.

Imprest money is an advance of cash given for a particular purpose and replenished as necessary and restored to its original level. For example, you may be given imprest money of Rs. 500/-

for local purchasing of emergency drugs, which are not available in your stock.

As soon as you spend this amount another Rs 500/- is given to you. The imprest money at times may get exhausted within weeks or may not be utilised for months together. It is ensured that you always have this amount of Rs. 500/- available with you for local purchasing of emergency drugs.

Where as 'Grant' is a definite amount given for specific purpose for a definite time period, usually given yearly. You will receive Rs. 500/- every year for repair of cold chain equipment under RCH programme.

#### **4.3 PREPARATION OF FINANCIAL ESTIMATION OR BUDGETING**

The Medical Officer at PHC usually do not have to prepare a budget. However, you should understand the budgetary procedure. So that if needed you can extend help to the District Level Medical Officer particularly for preparation of budget for additional activities to be undertaken and for additional facilities made available at PHC. For example, under RCH Programme – inputs available for establishment of operation theatre, labour room etc. Estimating the requirement of money to perform the activities during any particular period is budgeting. Thus budgeting means stating the activities that have to be performed at PHC and at sub-centres in monetary terms.

Since, you get the staff, physical facilities and drugs, material, equipment etc. for carrying out these activities supplied from your district level from the allocated fund, you do not have to prepare a budget for each financial year. This is done at district level.

In order to facilitate the district level officer to prepare the budget estimation for your PHC and sub-centres, you should prepare your action plan which would give the details of each service to be provided at each level specifying the resource requirement for each activity. In addition, if you need replacement of any instrument,

equipment, repair of your building, vehicle you must submit these well in advance, so as to include the monetary requirement in the budget allocation for your PHC.

When you plan to organise any special activity/camp/mela etc., you have to prepare a detailed plan specifying the resource requirement translated into monetary term and submit well in advance.

### **Example:**

Budget for additional requirement for organizing a camp in a village for screening of anaemia among adolescent girls.

<b>BUDGET</b>	
<b>LIST OF ITEMS</b>	<b>REQUIREMENT OF MONEY</b>
1. Tent and furniture (on rent)	400.00
2. Banner, Poster etc.	200.00
3. POL for Vehicle	200.00
4. Arrangement for drinking Water	100.00
5. Honorarium to Volunteers (2) @ Rs. 25/- to each.	50.00
6. Miscellaneous	50.00
<b>TOTAL</b>	<b>1000.00</b>

## **4.4 MANAGEMENT OF PETTY CASH/IMPREST/VISIBLE MONEY**

As explained, the Petty cash or imprest money is a small amount of cash given to you as an advance for some specific tasks. This amount for a PHC, varies from state to state. This is usually



fixed up in consultation with the State Level Directorate, District Level Officers and Medical Officers from PHCs. This imprest money is also known as contingency advance in many states. The purposes for which this advance can be utilised also vary from state to state. Some of the purposes for which this petty cash/contingency fund may be used for payment are given below:

- i) **Postages** : Stamps, telegrams, telephone calls in the absence of telephone or if it is not functioning at PHC.
- ii) **Stationaries** : Office papers, glue, cellotape (adhesive tape) pins, envelopes etc.
- iii) **Cleansing material** : Soap, detergent etc.
- iv) **Transport** : Small repairs of vehicle (Puncture repair). Bus fares for workers/Messengers etc.
- v) **Miscellaneous**: Candle, matches, tea, emergency supplies etc.

#### 4.5 MAINTENANCE OF ACCOUNTS

Each time, money is spent from the contingency fund, it must be recorded. In many places use of petty cash voucher system is practiced. In that case, you have to prepare a petty cash voucher for each time you are spending money and each voucher should be numbered. Each petty cash voucher should have a receipt attached to it from the shopkeeper or who ever has been paid the money. If this is not possible, you, as incharge, should verify and put your signature in the voucher. You must keep all these vouchers in safe custody. The cashier or auditor may ask to see these at any point of time.



An example of petty cash voucher:

Voucher No. :		
Date :		
Goods		Amount (Rs.)
1.Candle	– 1 packet	8.00
2. Matches	— 1 Box	0.50
Attached receipt		
		Signature of the Purchaser
		Signature of MO I/c.

#### 4.5.1 Contingency Fund Book:

The amount of expenditure is maintained in a cash book. This may be done in simple way where you do not have to enter the breakdown of all the items on what you have spent the money. Only the broad/major heads or purpose is written and you must enter the amount spent on that on specific dates. In some places the detailed subheads/items are entered.

**For example:**

DATE	ITEMS	VOUCHER NO.	AMOUNT	
			RECEIVED	SPENT
01.04.99	IMPREST MONEY		500.00	
05.04.99	STAMPS	1		10.00
10.04.99	REPAIR OF PUNCTURE TYRE	2		15.00
12.05.99	VIM	3		20.00

DATE	ITEMS	VOUCHER NO.	AMOUNT	
			RECEIVED	SPENT
	POWDER			
16.05.99	CANDLE AND MATCH BOX	5		10.00
30.07.99	PAPER	5		40.00
31.07.99	<b>TOTAL</b>		<b>500.00</b>	95.00
	<b>BALANCE</b>		<b>405.00</b>	

In addition to this you may have to maintain a number of registers for maintenance of accounts for which payment may be done by you on behalf of the District Level Account Officer. For example – Salary Register. For payment of Salary to all your staff or staff of all the sub-centres under your charge, the pay bills are prepared at the district level and the total money is given to you for distribution to all the staff.

In salary register, Salary for each staff is entered every month. Each staff after receiving the Salary is asked to sign in the register and you have to put your signature at the end after verifying that it is given to each staff.

Similar register should be maintained for other purposes, like TA Bill payment Register, Festival advance register, etc.

At the end, it may be concluded with a statement that you, as a Medical Officer at PHC may be responsible for management and maintenance of accounts of invisible money indirectly by ensuring proper utilization of the resources allocated to you, but are directly responsible for the proper utilisation of the contingency fund and maintenance of its account.

### KEY POINTS

- You are indirectly responsible for management of Invisible money/Budget allocation by ensuring economic and effective utilization of resumes provided at your PHC and subcentres under your contract.
- Prepare a budget in advance for additional activities and submit to your district authority for approval.
- Directly responsible for the amount spent from your contingency fund/Imprested money/Grant given for specific purpose.
- Always record expenditure each time, money is paid from contingency fund for correct maintenance of account.
- Try to use Petty cash Voucher System. It helps in maintenance of correct account.





## UNIT – V

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### ***MONITORING, EVALUATION AND USE OF MANAGEMENT INFORMATION SYSTEM (MIS) AT PHC***

#### **Learning Objectives**

With the help of this unit, you should be able to:

- Explain the terms MONITORING, EVALUATION and MANAGEMENT INFORMATION SYSTEM,
- Monitor the performance of PHC using MIS prescribed by MOHFW.
- Evaluate the performance of activities relating to Reproductive and Child Health (RCH) programme.

#### **Contents**

- Definition of Monitoring, Evaluation and MIS
- Mechanisms of Monitoring and Evaluation under the RCH programme
- Flow of information under MIS in RCH programme

#### **5.1 INTRODUCTION**

Monitoring and Evaluation are essential management tools, which help to ensure that RCH activities are implemented as planned and to assess whether desired results are being achieved.

MIS is a system for collection, compilation and analysis of relevant information connected with RCH programme.

Under the RCH programme, qualitative indicators have been in-built in the monthly reporting system so that as MO (PHC), you can identify the gaps or deviations from the plans after examining the monthly reports sent to you from the sub-centre in Form No. 6 and prepared by you at PHC in Form No. 7.

## **5.2 CONCEPTS OF MONITORING, EVALUATION AND MIS**

Monitoring can be defined as a process of measuring, recording, collecting and analysing data on actual implementation of the programme, so that any deviation from the planned operations are detected, diagnosis for the causes of deviation is carried out and suitable corrective actions are taken.

Evaluation is aimed to assess whether desired results of a programme have been achieved and if not, how should it be redesigned.

Management information system is a system adopted for collection, maintenance, analysis and utilisation of data. It is the other name of "Records, Reports and Returns". MIS ensures regularity and continuity in the flow of information so that managers at various levels can make best use of available resources. They can identify programme problems, take corrective steps and develop future strategies.

Under the RCH programme, a number of forms are prescribed in which monthly reports must be prepared at each level and submitted to the higher level.

## **5.3 MONITORING UNDER RCH PROGRAMME**

Collection of data starts at the grass root level by MPW (M) & MPW (F). For maintenance of records, various registers are

prescribed at each level. Different reporting proformae are prescribed for flow of information from grass root level to the top.

ANM at the sub-centre will submit the monthly report of the activities conducted in her area in Form No. 6 (Enclosed as Annexure).

Form No. 6 contains performance data in five different columns. In the first two reporting columns, the performance in the month for which the report is being submitted is compared in the current year with the performance achieved in the previous year in the same month. This would reliably indicate whether the work achieved in the month under the report has been adequate.

In the next two reporting columns, the performance for the portion of the year completed is compared for the current year with the performance achieved in the same portion of the year in the previous year. This will tell you whether the progress of work during the year is satisfactory. Last column of the form depicts planned performance in current year. This will help you to check the progress for the reporting month in comparison with the expected achievements for the year as a whole. You can also check for the adequacy of stock of drugs and vaccines and tally with the quantities required for the cases reported to have been covered/treated.

At the end of the report, space has been provided to mention prominent handicap/difficulty or prominent achievement. This will help you to understand the difficulties and to appreciate the achievements made by the MPWs so that you can take prompt action to remove difficulties.

After receiving the Form no. 6 from all the sub-centres under your PHC, you have to compile the information from all the sub-centres and add the achievements for the services directly provided in the PHC as deliveries conducted, MTP cases done, treatment given in RTI/STI cases, immunization done in PHC etc in Form No. 7. So monthly report from PHC/Urban Dispensary will be sent to the district in the Form no. 7. In Form No. 7, in addition to the



points mentioned for sub-centre monthly report, you can also check for working condition of key equipments and the utilization of labour room/Operation Theatre in terms of deliveries conducted, sterilization operations done, IUD insertions made etc.

From FRU/CHC/Sub-Divisional hospital/PP Centre/District hospital to the district, the monthly reporting form is Form No. 8. Form No. 9 is for consolidated monthly report from District to State/Centre.

In addition, you must also do direct monitoring of all the activities carried out not only at PHC but also at each sub-centre under your control periodically. This is part of your supervisory responsibility. You must regularly visit the sub-centres, villages and ensure that services are being provided as planned based on the need assessment, material and equipment utilised for provision of services and there is no deviation from the expected manner of provision of quality services. If any, you must find out then and there the reasons for deviation and take corrective actions.

## **Monitoring Indicators**

### **What is an Indicator?**

An indicator is a measurable variable that can be used as a guide to monitor and evaluate the quantity as well as quality of services provided. Emphasis is given on such indicators under RCH programme which will help you to determine the quality of RCH services provided at sub-centre as well as PHC level. For example,

- i) Number of pregnant women registered before 16 weeks of pregnancy,
- ii) Number of pregnant women who had 3 ante-natal check-ups,
- iii) Number of children who completed doses of immunization etc.



## **5.4 EVALUATION**

Evaluation involves not only the compilation of the performance data but also attempts to assess the functioning of the programme and the individual personnel involved in it from qualitative point of view.

Under the RCH Programme, evaluation is undertaken by following mechanisms.

### **5.4.1 DISTRICT SURVEYS**

District level surveys are undertaken through non-governmental agencies appointed by the government on an annual basis. Half of the districts in the country are covered each year. A number of process indicators as well as service indicators have been developed which are ascertainable through household survey.

On an average, one thousand households per district are surveyed covering both rural and urban areas. This survey covers the following aspects:

- a. Prenatal/Natal/Postnatal services to women
- b. Issues relating to pregnancy of women
- c. Family Planning issues
- d. Unmet needs
- e. Maternal mortality and issues relating to it
- f. Infant mortality and issues relating to it
- g. Knowledge of AIDs/HIV
- h. Utilisation of public health services
- i. Services required for community

### **5.4.2 CONCURRENT EVALUATION**

To supplement the monthly reporting system, an independent system of concurrent evaluation has been set up under the RCH Programme. Under this system, one district per month is covered in each State/UT to ascertain whether the facilities created at various

levels are functioning well and also whether the services are being extended to users in a user-friendly manner. A small number of key indicators are used for the assessment. The items to be collected at your level would be as follows:

### **Primary Health Centres**

- a. Number of male and female doctors sanctioned and in position.
- b. Number of nurses and other paramedical staff sanctioned and in position
- c. Number of vehicles given to PHC and available in working order, if not available or not in working order, the dates since when the same have not been available or not in working order.
- d. The stock of vaccines and the record of breakdown of Cold Chain equipment during the last one month.
- e. Whether an Operation Theatre is available and if so the availability of equipments and the quality of maintenance.
- f. Number of male and female sterilization operations, IUD insertions and MTP operations undertaken during the last one month.
- g. Number of deliveries conducted in the PHC during last one month.

### **Sub-Centre**

- a. Whether the sub-centre is centrally located. Whether it is in a Government building and what is the general condition of the facilities in the sub-centre.
- b. What is the availability of ANM and Male Multi-purpose workers in the sub-centre and whether they attend office regularly.
- c. Whether all the stocks of drugs and vaccines are available in the sub-centre and is the arrangement for their storage satisfactory.
- d. Whether ANM and Male Multi-purpose Workers are maintaining upto date records.

- e. IUD insertions made and deliveries conducted by the ANM during the last one and three months.
- f. General comments about the adequacy of work done by ANM and Male Multi-purpose Workers along with a brief account of difficulties experienced.

### **User Satisfaction:**

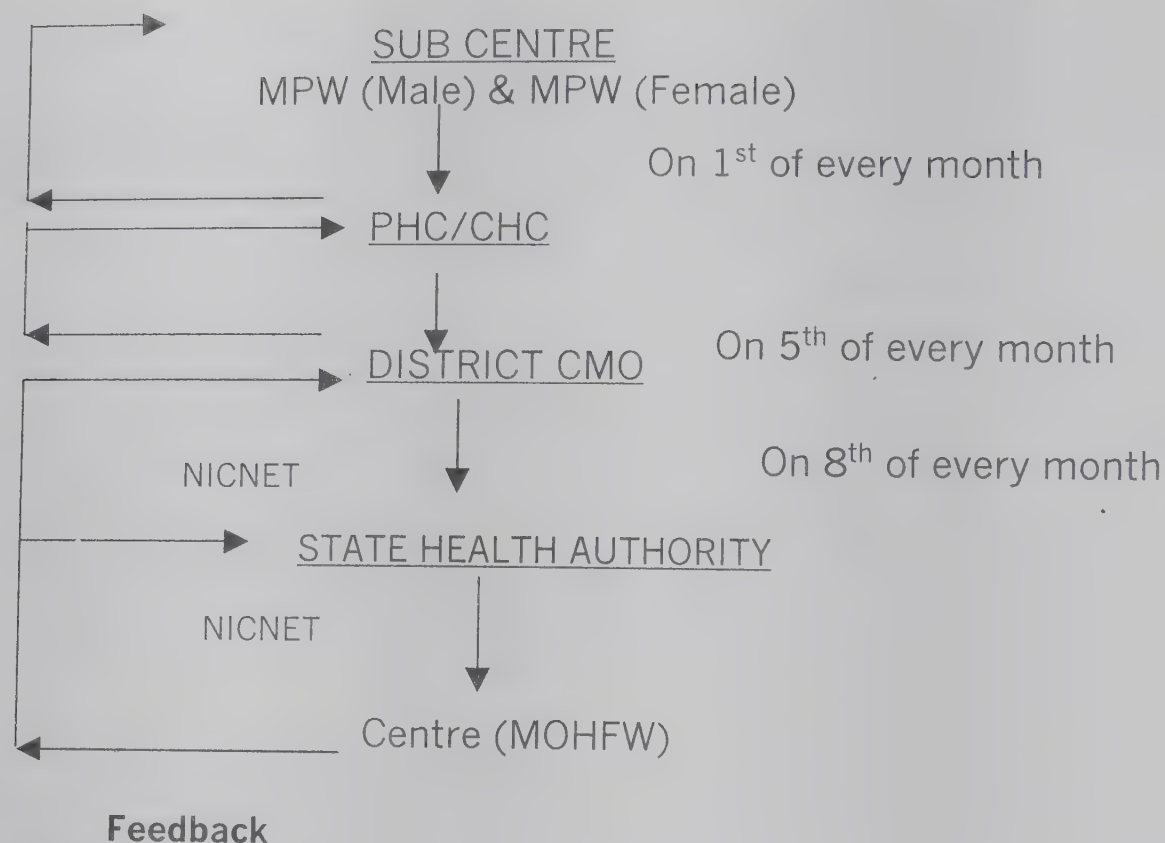
In order to assess the quality of services provided, client satisfaction is surveyed.

(To visit two villages out of which at least one should be at least 10 Km. away from Block Headquarters in one of the sub-divisions of the district. Also similar visits have to be made to at least one Municipal ward preferably with a population of poorer sections of the community).

- a. To ascertain from some women who may have delivered recently whether three prenatal and three postnatal checks were made by the ANM. Also to ascertain whether anti tetanus immunization was given.
- b. To ascertain whether delivery was institutional or by a trained birth attendant or by untrained birth attendant. In case it was with the help of untrained birth attendant, to ascertain why institution or ANM was not approached.
- c. To ascertain immunization status of children below 5 years.
- d. To ascertain availability of contraceptives meant either for free distribution or social marketing.
- e. To ascertain whether their needs are being attended to in a courteous manner when they approach the ANM/PHC or FRU and whether ANM or Male Multi-purpose Health Worker is approaching them to ascertain their needs and to provide counselling.

### **5.4.3 FLOW OF INFORMATION UNDER MIS:**

Regular and continuous flow of information enables the health managers at various levels to monitor the RCH programme successfully. Flow under the Routine Reporting system is as follows:



### Key Points

- ◆ Monitoring is a process of measuring, recording, collecting and analysing data so as to take corrective action.
- ◆ MIS is a system for collection, compilation, analysis and utilisation of relevant information.
- ◆ Qualitative indicators have been in-built in the monthly reporting system under RCH programme.
- ◆ You can check for the progress of activities in comparison with the planned performance and identify the gaps or deviations after examining the monthly reports sent to you from the sub-centre in Form No. 6.
- ◆ After identifying the gaps, you can find out the causes of these gaps during monthly meetings and observations made during supervisory visits.
- ◆ You can plan Corrective actions based on the cause of the problem.



FORM 6

MONTHLY REPORT FOR SUB-CENTRE/URBAN HEALTH POST/REVAMPING CENTRE  
(REPORT OF ANM/MPW (MALE))

General Information

1. State: \_\_\_\_\_  
District: \_\_\_\_\_  
PHC : \_\_\_\_\_  
Sub-centre: \_\_\_\_\_  
Population of PHC: \_\_\_\_\_  
Population of Sub-centre: \_\_\_\_\_
2. Reporting for the month of : \_\_\_\_\_
3. Eligible Couples (as on 1<sup>st</sup> April of the year): \_\_\_\_\_

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative Performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
1.	<b>Ante-Natal Care</b>					
1.1	Ante-natal cases Registered					
	a) Total					
	b) Less than 12 weeks					
1.2	No. of pregnant women who had 3 check-ups					
1.3	Total no. of high risk pregnant women referred					
1.4	No. of TT doses					
	a) TT 1					
	b) TT 2					
	c) Booster					
1.5	No of pregnant women under treatment for anaemia					
1.6	No of pregnant women given prophylaxis for anaemia					
2.	<b>Natal Care</b>					
2.1	Total No. of deliveries					

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative Performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
<b>2.2</b>	Home deliveries a) (I) by ANM (ii) by LHV b) By trained birth attendant c) Untrained birth attendant					
2.3	Deliveries at Sub-centre					
2.4	Complicated deliveries referred to PHC/FRU					
<b>3.</b>	<b>Maternal Deaths</b>					
3.1	During pregnancy					
3.2	During delivery					
3.3	Within 5 weeks of delivery					
<b>4.</b>	<b>Post Natal Care</b>					
4.1	No. of women given 3 post-natal check-ups					
4.2	Complications referred to PHC/FRU					
<b>5.</b>	<b>RTI/STI</b>					
5.1	Cases a) Detected b) Treated c) Referred					

S.N.	Services	Performance in corresponding month of last year		Performance in the reporting month		Cumulative Performance till corresponding month of last year		Cumulative performance till current month		Planned performance in current year	
6.	<b>Pregnancy Outcome</b>										
6.1	a) Live births b) Still births	M	F	M	F	M	F	M	F	M	F
6.2	Order of Birth in 3.1 (a) a) 1 <sup>st</sup> b) 2 <sup>nd</sup> c) 3 <sup>rd</sup>										
6.3	Newborn status at birth a) Less than 2.5 kgs b) 2.5 kgs or more c) No. of high risk newborns referred to PHC/FRU										
		M	F	M	F	M	F	M	F	M	F
7	<b>Immunization</b>										



S.N.	Services	Performance in corresponding month of last year		Performance in the reporting month		Cumulative Performance till corresponding month of last year		Cumulative performance till current month		Planned performance in current year
7.1	Infant 0 to 1 year BCG DPT1 DPT2 DPT3 OPV0 OPV1 OPV2 OPV3 Measles									
7.2	Children more than 18 months DPT Booster OPV Booster									
7.3	Children more than 5 years DT									
7.4	Children more than 10 years TT	M	F	M	F	M	F	M	F	
7.5	Children more than 16 years TT									
7.6	Adverse reaction reported after immunization									

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative Performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
8.	Vitamin A administration (9 months to 3 years)					
	Dose 1					
	Dose 2					
	Dose 3- 5					
9	Childhood Diseases	M	M	M	M	F
9.1	Vaccine preventable diseases					
	a) Diphtheria					
	i) Cases detected					
	ii) Treated					
	iii) Referred					
	iv) Deaths					
	b) Poliomyelitis (AFP)					
	i) Cases detected					
	ii) Treated					
	iii) Referred					
	iv) Deaths					

S.N.	Services	Performance in corresponding month of last year		Performance in the reporting month		Cumulative Performance till corresponding month of last year		Cumulative performance till current month		Planned performance in current year	
		M	F	M	F	M	F	M	F	M	F
9.2	c) Neo Natal Tetanus i) Cases detected ii) Treated iii) Referred iv) Deaths d) Measles i) Cases detected ii) Treated iii) Referred iv) Deaths										
9.3	ARI under 5 years (Pneumonia) a) Treated with Cotrimoxazole b) Referred to PHC/FRU c) Deaths										
9.4	Acute diarrhoeal diseases under 5 years a) Treated with ORS b) Referred to PHC/FRU c) Deaths										

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative Performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
10.	<b>Child Deaths</b>					
	a) Within 1 week b) 1 week to 1 month c) 1 month to 1 year d) 1 year to 5 years					
11	<b>Contraceptive Service</b>					
11.1	Eligible couples contacted					
11.2	Male sterilisation a) Total no. of cases motivated b) No. of cases followed up					
	Female sterilisation a) Total no. of cases motivated b) No. of cases followed up					
11.4	Total IUD insertions a) Cases followed up b) Complication c) Discontinued i) Removed ii) Expelled					



S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative Performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
11.5	Total Oral Pill users a) Old Users b) New Users c) Complications d) Discontinued					
11.6	Total condom users					
<b>12</b>	<b>Abortions</b>					
	a) No. of women referred for MTP b) No. of MTP done c) Cases followed up d) Complications e) Deaths					

Sl.No.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
<b>13</b>	<b>Communicable Diseases</b>					
13.1	Malaria a) No. of fever identified b) No. of blood smear slides sent to PHC c) No. of fever cases given presumptive treatment d) No. of positive cases of malaria e) No. of positive cases given radical treatment f) No. of anti-mosquito activities co-ordinated g) No. of high risk villages identified					
13.2	Tuberculosis a) No. of suspected cases i) Identified ii) Referred b) No. of sputum positive cases c) No. of TB cases followed up					

#### IV Interaction with Community

Serial No.	Meeting with	No. of Meetings
1.	Panchayat Health Committee	
2.	Mahila Swasthya Sangh	
3.	Anganwadi Workers	

#### V Monthly Stock Position

Sl. No.	Item	Opening Balance	Received	Total	Consumption	Balance	Requirement
1.	IFA Large						
2.	IFA Small						
3.	Vitamin A						
4.	Cotrimoxazole						
5.	ORS packets						
6.	Methylergometrine						
7.	Chloropheniramine						
8.	Paracetamol						
9.	Anti-spasmodic tablets						
10.	Inj. Methylergometrine						
11.	Mebendazole						
12.	Syringes & Needles						
13.	Vaccine day carrier						
14.	Steriliser Autoclave						
15.	Chloramphenicol						
16.	Centrimide						

	Power						
17.	Povidone ointment 5%						
18.	Cotton bandage						
19.	Contraceptives a) Nirodh b) Oral Pills c) IUDs						
20.	Disposable delivery kit						
21.	Chloroquine Tab						

#### VACCINE RECEIVED FROM PHC

S.N	Name of vaccine weekly session 1 Date/Dose	Vaccine received for weekly session 2 Date/Dose	Vaccine received for weekly session 3 Date/Dose	Vaccine received for weekly session 4 Date/Dose	Vaccine received for weekly	Vaccine received	Total
1.	DPT						
2.	OPV						
3.	DT						
4.	TT						
5.	BCG						
6.	Measles						

Last training attended (mention month and year)

Date of inspection made in reporting month by

- (i) MPW (Male)
- (ii) MPW (Female/ANM)

LHV \_\_\_\_\_  
MO (PHC) \_\_\_\_\_



BEE \_\_\_\_\_  
DMO \_\_\_\_\_

A note on the progress made as well as the handicap or achievement experienced in the field either because of shortage of essential supplies, vaccines or personnel essential to the programme and resistance encountered on account of social and cultural beliefs.

(Do not use more than this space)

Signature ANM  
Signature (Male Health Worker)

## FORM 7

**MONTHLY REPORT FROM PHC/URBAN DISPENSARY TO DISTRICT**  
**(REPORT OF MEDICAL OFFICER)**

**I. General**

4. State: \_\_\_\_\_
5. District: \_\_\_\_\_
6. PHC : \_\_\_\_\_
7. Population of PHC: \_\_\_\_\_
8. Reporting for the month of : \_\_\_\_\_
9. Eligible Couples (as on 1<sup>st</sup> April of the year): \_\_\_\_\_

## II Services

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
<b>1.</b>	<b>Ante-Natal Care</b>					
1.1	Ante-natal cases Registered c) Total d) Less than 12 weeks					
1.2	No. of pregnant women who had 3 check-ups					
1.3	Total no. of high risk pregnant women attended Attended and Treated at PHC Referred to FRU					
1.4	No. of TT doses d) TT 1 e) TT 2 f) Booster					
1.5	No of pregnant women under treatment for anaemia					

S.N	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
1.6	No of pregnant women given prophylaxis for anaemia					
2.	<b>Natal Care</b>					
2.1	Total No. of deliveries					
2.2	Home deliveries d) By ANM/LHV b) By trained birth attendant e) Untrained birth attendant					
2.3	Institutional deliveries (total) a) at PHC b) At Sub-centres					
2.4	Deliveries referred to FRU					
3.	<b>Pregnancy Outcome</b>	M F	M F	M F	M F	



S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
3.1	No. of births a) Live births b) Still births					
3.2	Order of birth in 3.1 (a) a) 1 <sup>st</sup> b) 2 <sup>nd</sup> c) 3+					
3.3	New born status at birth a) less than 2.5 Kg b) 2.5 Kg. Or more c) No. of high-risk new borns referred to FRU					
4.	<b>Post Natal Care</b>					
4.1	No. of women given 3 post-natal check-ups					
4.2	Complications referred to FRU					
5.	<b>Maternal Deaths</b>					
5.1	During pregnancy					

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
5.2	During delivery					
5.3	Within 6 weeks of delivery					
6.	RTI/STI					
6.1	Cases detected and treated	M	M	M	M	
6.2	Cases referred to FRU					
7.	Immunization					

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
7.1	Infant 0 to 1 year BCG DPT 1 DPT 2 DPT 3 DPT Booster OPV 0 OPV 1 OPV 2 OPV 3 MEASLES					
7.2	Children more than 18 months DPT Booster OPV Booster					

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
	<b>Full Immunization</b>					
7.3	Children more than 5 years DT					
7.4	Children more than 10 years TT					
7.5	Children more than 16 years TT					
	<b>Adverse reactions reported after immunization</b>					
8.	<b>Vitamin A administration (9 months to 3 years)</b>					
	Dose 1 Dose 2 Dose 3- 5					
9	<b>Childhood Diseases</b>					



S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
9.1	<b>Vaccine preventable diseases</b> e) Diphtheria Cases Deaths f) Poliomyelitis (Acute Flaccid Paralysis) Cases Deaths g) Neo-natal Tetanus Cases Deaths					

S.N.	Services	Performance in corresponding month of last year		Performance in the reporting month		Cumulative performance till corresponding month of last year		Cumulative performance till current month		Planned performance in current year	
	h) Tetanus other than Neo-Natal Cases Deaths i) Whooping cough Cases Deaths j) Measles Cases Deaths										
9.2	ARI under 5 years (Pneumonia) d) Cases e) Treated with Co-trimoxazole f) Referred g) Deaths										

S.N.	Services	Performance in corresponding month of last year		Performance in the reporting month		Cumulative performance till corresponding month of last year		Cumulative performance till current month		Planned performance in current year
9.3	Acute diarrhoeal diseases under 5 years d) Cases e) Treated with ORT f) Referred to PHC/FRU g) Deaths									
10.	<b>Child Deaths</b>									
	e) Within 1 week f) 1 week to 1 month g) 1 month to 1 year h) 1 year to 5 years									
11.	<b>Contraceptive Service</b>									
11.1	Eligible couples contacted									

S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performance in current year
1.2	Male sterilisation c) Conventional d) Non-Scalpel					
11.3	Total IUD insertions d) Cases followed up e) Complications c) Discontinued					
11.4	Total Oral Pill users e) Old Users f) New Users g) Complications h) Discontinued					
11.5	Total condom users					



S.N.	Services	Performance in corresponding month of last year	Performance in the reporting month	Cumulative performance till corresponding month of last year	Cumulative performance till current month	Planned performa- nce in current year
12	Abortions					
	f) Spontaneous g) No. of MTPs at PHC h) Cases followed up i) Complications j) Deaths			•		

### III. FACILITIES:

1. Transport:  
a) Vehicle: \_\_\_\_\_  
Total : \_\_\_\_\_  
On Road: \_\_\_\_\_
2. X-ray machine  
Available : Yes \_\_\_\_\_ No \_\_\_\_\_  
Working: Yes \_\_\_\_\_ No \_\_\_\_\_
3. Status of cold chain equipments:

Equipment	Total Supplied	Total Working	No. not working for more than a month
ILR-300			
D.F.Z - 300			
ILR - 140			
D.F.Z - 140			

#### IV. VACANCY POSITION

Category	No. of Posts sanctioned	No. in position	Not in position since (mention date for each vacancy)
MO (including specialist) Dental Surgeon Staff Nurses/Nurses mid-wife Pharmacist/Compounder Lab Tech./Lab assist. Radiographer Computer Driver Paramedical Supervisor (Malaria Inspector) (BEE)			

Category	No. of Posts sanctioned	No. in position	Not in position since (mention date for each vacancy)
(PHN/LHV) (HA) Multi-purpose worker Male/Female			

### INVENTORY OF DRUGS, VACCINES, LAB CONSUMABLES AND EQUIPMENT

Sl. No.	Item	Unit	Stock in Hand	Consumption	Balance stock	Stock sufficient for months
1.	ORS Packets					
2.	Tubal Rings					
3.	Laparoscope					
4.	Nirodh Packets					
5.	Oral Pill Packets					
6.	IUDs					
7.	Iron solutions					
8.	Vitamin A solution					
9.	IFA Large Tablets					
10.	IFA Small Tablets					
11.	DPT Vaccine					
12.	Polio Vaccine					
13.	TT Vaccine					
14.	BCG Vaccine					

Sl. No.	Item	Unit	Stock in Hand	Consumption	Balance stock	Stock sufficient for months
15.	DT Vaccine					
16.	Measles Vaccine					
17.	RTI/STI Drugs					
18.	MTP Suction Apparatus					

Number of inspections made by MO, PHC during the month:

1. LHV \_\_\_\_\_
2. ANM \_\_\_\_\_
3. Male Health Worker \_\_\_\_\_

Number of villages visited: \_\_\_\_\_

Note on Progress made \_\_\_\_\_

---

Signature MO (PHC)



## **QUALITY IMPROVEMENT**

### **LEARNING OBJECTIVES**

With the help of this unit, you should be able to

- Comprehend and explain the concept of Quality
- Explain the relevance and need for Quality Improvement in health care services
- Appreciate the importance of Clients Right's
- Explain Facilitative Supervision

### **CONTENTS**

- Introduction
- What is quality?
- Quality of care frameworks

- Who is responsible for quality improvement?
  - Quality improvement in primary health care
  - QI approaches and tools
  - Why use cope and facilitative supervision?
- 

***Source : Dr. Bulbul Sood, AVSC International***

## 6.1 Introduction

Health care providers and programs worldwide have increasingly recognized that the quality of care they provide determines their overall success in attracting clients and meeting their needs. People's perceptions of quality of care provided often determine whether they seek services and continue to use the services. Clients, service providers/staff, and program managers often have different views on what constitutes quality of care.

The purpose of this unit is to provide clinicians and clinic managers with information about how to improve and maintain quality health services.

For more than thirty years the Family Welfare Programme in India had a primary objective of reducing fertility as quickly as possible. In order to achieve this goal, the program employed a strategy based on contraceptive targets and cash incentives for acceptors and provider. The achievement of targets was stressed because it was quantitative, easy to monitor and was expected to have a direct link with reducing fertility. Although the contraceptive prevalence rate was increasing over this period, the corresponding decline in fertility was lower than expected. It was also realized that in the zeal to achieve targets, inadequate attention was given to the quality of family planning services.

The Reproductive and Child Health Programme launched by the Government of India in 1997 now addresses these problems using the following strategies:

- Community participation in planning for services and prioritizing,
- Client-centred approach to service provision
- Up-graded facilities and improved training
- Emphasis on good quality care

- Absence of contraceptive targets and incentives
- Making services gender sensitive, and
- Multi-sectoral approach in implementing and monitoring services.

## 6.2 What is Quality?

**Quality of care** refers to the way in which individuals and couples are treated by the health care system providing services. **Quality services/care** is the service/care you would want to receive or would want your spouse, children, or parents to receive. **Quality** is about meeting clients' needs and allowing staff to work more efficiently. **Quality improvement** requires on-going attention—it is not attained by a one time meeting or training event, but should become part of what staff is always doing.

### 6.2.1 Activity: Exploring views on quality of care

Important quality-related factors to you or family members when you seek services	Important quality-related factors to you as a provider of services
Important quality-related factors for the program/organization you work for	Strengths of my program/organization that are conducive to providing quality services



### Issues to discuss:

- Do the same things matter to clients, providers, and programs/organizations?
- What can be some of the differences?
- What happens when there are differences?
- What would you think your program/organization should do to ensure that the client's perspective is considered?

Most of you probably answered that, as a client, you would want services to be safe, affordable, given with dignity while maintaining privacy and confidentiality. As a provider you would want to have the required skills, sufficient supplies, equipment in working order and supportive working environment.

### 6.2.2 Different approaches: Similar underlying principles

Different quality improvement approaches are based on similar principles, but they sometimes have varying levels of emphasis.<sup>1</sup> The principles include, but are not limited to:

- *Developing a customer mindset or focus* - service providers and programs must focus on the needs and rights of clients/community, and providing quality services is generally among the highest priorities in the organization
- *Creating staff involvement and ownership in the quality improvement process* – managers and supervisors cannot improve quality alone. They need to mobilize and involve all levels of staff to create ownership in the quality improvement process.
- *Emphasis on improving processes and systems rather than blaming individuals* – often when staff do not perform well, it is because work processes and systems are barriers to good performance. When organizations remove barriers to good performance, they will see better results. If managers blame staff after mistakes have already

been made, staff are likely to resent this. Similarly, honest self-assessment by site staff requires trust and that staff know that bringing up problems will not have negative repercussions and result in punishment.

- *Cost consciousness and efficiency* – improving systems and work processes increases efficiency and ultimately translates into savings.
- *Continuous quality improvement* – quality improvement is a continuous process. There is always room for improvement regardless how good the services provided are.
- *Staff development and capacity building* – improving quality requires well-trained staff, staff that are aware of the importance of quality improvement, and feel motivated to ensure that clients receive good services. Human resource systems, including training and supervision, and also logistics, and management information systems have considerable impact on staff motivation. Capacity and performance at both the individual and organizational levels are important issues.

Quality improvement does not happen automatically! Managers and supervisors at all levels play an important role in involving all levels and types of staff in quality improvement and in sustaining the quality improvement process. Although sometimes hesitant at first, staff generally will respond positively to being involved in solving day-to-day problems. Supervisors and managers need to play a constructive role in terms of removing barriers to quality and working with staff to solve problems that are due to factors outside the site.

### **6.2.3 Quality of care frameworks**

Several quality of care frameworks exist. These include, among others, the Charter of Clients' Rights and Providers' Needs developed by the International Planned Parenthood Federation and the Bruce framework. AVSC International adapted IPPF's framework and used it

as a foundation for its quality improvement approaches and tools (see Boxes 1 and 2).

### ***Exhibit 6.1***

#### **Box 1**

#### **The Rights of Clients**

**Information:** Clients have a right to accurate, appropriate, understandable, and unambiguous information related to reproductive health and sexuality, and to health overall. Educational materials for clients need to be available in all parts of the health care facility.

**Access to services:** Services must be affordable, available at times and places convenient to clients, without physical barriers to the health care facility, without inappropriate eligibility requirements for services, and without social barriers, including discrimination based on gender, age, marital status, fertility, nationality or ethnicity, social class, caste or sexual orientation.

**Informed choice:** A voluntary, well-considered decision that an individual makes on the basis of options, information and understanding. The process is a continuum that begins in the community, where people get information even before coming to a facility for services. It is the provider's responsibility to either confirm, or help the client reach an informed choice.

**Safe services:** Safe services require skilled providers, attention to infection prevention, and appropriate and effective medical practices. This right also refers to proper use of service delivery guidelines, quality assurance mechanisms within the facility, counseling and instructions for clients, and recognition and management of complications related to medical and surgical procedures.



**Privacy and confidentiality:** Clients have a right to privacy and confidentiality during delivery of services, for example, during counseling and physical examinations, and in staff's handling of their medical records and other personal information.

**Dignity, comfort, and expression of opinion:** All clients have the right to be treated with respect and consideration. Providers need to ensure that clients are as comfortable as possible during procedures. Clients should be encouraged to express their views freely, also when their views differ from those of service providers.

**Continuity of care:** All clients have a right to continuity of services and supplies, follow-up and referral.

### **The Needs of Health Care Staff**

**Facilitative supervision and management:** Health workers function best in a supportive work environment with facilitative management and supervision that motivate staff and enable them to perform their tasks well and better meet the needs of external clients.

**Information, training and development:** For a facility to provide quality health services, staff must possess and continuously acquire the knowledge, skills and attitudes needed to provide the best reproductive and overall health services possible.

**Supplies, equipment and infrastructure:** In order for health workers to provide good services, staff need reliable and sufficient supplies, equipment in working order, and adequate infrastructure.

AVSC. 2000. Client-Oriented, Provider-Efficient. (New revision of COPE handbook).



## Exhibit 6.2

### Box 2: Bruce: Elements in the Unit of Service Received

- Choice of method
- Information given to clients
- Technical competence
- Interpersonal relations
- Follow-up/continuity mechanism
- Appropriate constellation of services

The two frameworks have considerable overlap. The needs of staff in Box 1 bear considerable similarity with the performance improvement factors that are used in performance improvement approaches to identify gaps in performance.

When the needs of the client are met, clients are more likely to:

- Understand their health issues better
- Follow treatment directions better
- Work with providers in preventing and managing illness.
- Have better overall health.

**Similarly, when clients are well-served and healthier, providers benefit by having better relationships with their clients. With better care and relationships, providers job are more satisfying, because:**

- They are more appreciated by clients
- Their health care efforts are less wasted or repeated because clients are more responsive
- The clinic/service environment is more pleasant and comfortable
- Their health care efforts make a more lasting impact on helping the community improve itself.

### **6.3 Cost of poor quality**

Service providers/programs initiate quality improvement because poor quality is costly: to clients, to the program, and to society overall.

#### **Activity - Brainstorming:**

- What costs of poor quality have the participants observed? (Possible examples: waste of supplies, clients' and staff's time; injury to clients requiring more expensive treatment; unwanted pregnancy; clients stop coming – go to other providers, or do not receive services)
- What are the possible benefits of good quality? (Possible examples: Satisfied clients; increased job satisfaction for providers, better health, less waste)

### **6.4 Who is responsible for Quality Improvement?**

Quality Improvement is an on-going process. There is always room for improvement at all levels in any system, and every staff member in the health care system is responsible for quality improvement. Quality improvement should not become the responsibility of managers alone. However, supervisors and managers can play an important role in promoting and sustaining staff involvement in maintaining and improving the quality of services provided.

Quality Improvement does not succeed automatically. You as a manager have to be more energetic in involving your staff in preventing, identifying and solving problems as and when required.

## **6.5 Quality Improvement in Primary Health Care:**

In late 1997, the Government of India launched the new Reproductive and Child Health program to replace the much narrower programs for maternal and child health and family planning, with the objective of addressing more effectively the broader reproductive health needs of the family. The current policies of client-centered approach is likely to yield substantial dividends in terms of meeting client's reproductive needs as well as India's broader demographic goals.

Quality Improvement initiatives are required to be taken at all levels of a service delivery system. You as the Medical Officer, have the important managerial responsibility to provide services at PHC/CHC more effectively and efficiently. What are the common problems encountered by you at your service delivery points? The majority of you would say they include chronic shortage of basic medicines, equipment and supplies, less number of staff, weak supervisory support for the workers, high rate of absenteeism to name a few. However, AVSC and its partners have experienced that, when provided with easy-to-use and practical tools, service providers and other staff can be more involved in solving many of the problems they face daily while carrying out their work and without waiting for assistance from higher levels. One can even say that without safe and effective front-line care, secondary and tertiary care is likely to be inefficient and perhaps even ineffective.

## **6.6 Quality Improvement Approaches and Tools:**

AVSC International, in collaboration with its country partners, has been developing approaches and tools to improve the quality of reproductive health service delivery. The "clients' rights and providers' needs" framework has been adopted for these tools, recognizing the fact that the interaction between clients and providers is ultimately where the quality inputs of a program are realized.



The approaches and tools were designed to address specific needs:

- Problem identification and problem-solving at the service site;
- Empowerment for, and ownership of, the quality improvement process;
- Improvement of supervision;
- Technical competence and quality assurance; and
- Access to services and linkages between services.

The tools are complementary and should be used together unless they are part of a larger initiative that already addresses the specific areas or needs mentioned above.

The following are the approaches and tools that together form a **practical package** to guide service providers, supervisors, and trainers on the quality improvement journey. It should be noted however, that the following description is only an introduction to the QI tools. In order to better understand how to use the tools and initiate the process described, it is suggested that you review the materials in the reference section. A complete understanding of the use of these tools require reading of references provided at the end of the unit. Also, it is recommended that, first time users of the tool observe and participate in the procedure themselves before they use the tools with their staff.

- **Client-Oriented Provider-Efficient Services (COPE):** A low-technology technique to improve services for clients. COPE enables local service-delivery teams to assess their own work in order to identify and find solutions to problems in their facilities. COPE is a continuous quality improvement process.

The self-assessment guides consist of trigger questions that encourage staff to question the way they usually perform their daily tasks, reinforce international clinical service standards, and highlight interpersonal relations and other areas of concern to



clients. Three of the guides focus on areas where needed interventions generally must take place if staff, in turn, are to meet the need and rights of clients, the site's primary customers. These guides focus on the care processes, as well as important factors that either enable or hinder staff in performing well, such as the staff-supervisor interaction, the organizational environment, and the way systems meet, or do not meet, staff's needs.

During the COPE process, staff and supervisors define quality in their own context through an exercise that encourages them to "put themselves in their clients' shoes," with staff describing how they would like to be treated if they or family members came for services. This exercise also serves to provide site staff with a vision of something positive toward which they can strive. In addition, client interviews help staff solicit clients' opinions of the services provided.

Based on the problems identified through the use of the different tools, staff develop an action plan. Staff learn to rely on solutions using local resources and ingenuity, which differs from the way many organizations are run in as much as staff often tend to wait for the central level or their supervisors to solve problems for them. The site also establishes a QI committee that is responsible for follow-up, or it vests this responsibility in an existing committee.

- **Facilitative Supervision (FS):** An approach to supervision that emphasizes coaching, joint problem solving and two-way communication between the supervisor and those being supervised. FS promotes a new frame of mind among supervisors and managers, encouraging them to consider staff members as their 'internal customers', whose needs they must meet for staff to be able to meet the needs of their own clients.

The approach helps supervisors and managers to break away from more traditional approaches to supervision that often rely on inspection and tend to blame individual staff members after mistakes have already been made. They shift to solving current problems and preventing problems in the future.

The application of both the COPE process and FS must become ongoing both at the site and organizational levels to enable staff to continuously solve day-to-day problems and to ensure that problems beyond the capacity of site-level staff are also solved.

- **Whole-Site Training (WST):** Commonly used centralized training strategies are often not conducive to meeting the needs of staff and providers, who need to function as a team responsible for providing quality services. As a result, the whole-site training approach gradually evolved to meet the learning needs of the site and of all levels of staff. For example, WST in Infection Prevention is conducted over two days at the PHC/CHC and involves staff at all levels, which includes doctor, Nurses, ANM, Lab Attendants, operation theatre as well as cleaning staff. During the second day all the staff is split into smaller teams and are asked to visit a section of the facility where they usually do not work. Following this assessment each team writes down all that they have observed related to IP practices where improvements can be made. Each team then develops an action plan addressing the problem identified, as well as the causes, and the interventions to be implemented.
- **Inreach:** interventions using resources within a health facility to improve understanding and knowledge of the facility's family planning or other reproductive health services. Inreach addresses missed opportunities by providing information about the facility's services to staff, clients, and potential clients in all departments of the facility; improving linkages and referrals between departments;

posting signs about services throughout the facility; and orienting staff from other departments about reproductive health services.

As a manager/in-charge of a PHC, you are responsible for your staff, support manpower and workers of other sectors like Traditional Birth Attendants, Community Health Volunteers and Anganwadi Workers. These quality approaches and tools would facilitate your working towards providing better services along with the entire staff as a team. Also, these tools, especially COPE and Facilitative Supervision, will enhance staff participation and accountability leading to provision of improved quality care and services.

### **6.7 Why use COPE and Facilitative Supervision?**

People generally say that although improving quality is a difficult task, the COPE tools are

- simple
- practical
- able to involve staff at all levels and create ownership
- adaptable
- transferable
- cost effective
- a forum for staff interaction
- helpful in team building and use wisdom of every one at the service delivery site.

Using facilitative supervision helps supervisors to successfully use self-assessment and problem-solving at the site.



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It should also be noted that quality improvement and performance improvement approaches are similar but have different origins and orientation. Quality improvement approaches focus on



customers needs and rights, while performance improvement approaches focuses on individual and organizational performance. The two approaches are complementary and both rely on a problem-solving cycle in which gaps in performance and quality are identified.

### **Key Points**

- ◆ **Quality of care refers to the way in which individuals and couples are treated by the Health care system.**
- ◆ **Quality improvement is an on-going process.**
- ◆ **Clients have a right to accurate, appropriate, understandable and unambiguous information.**
- ◆ **Clients have a right to privacy and confidentiality.**



# Communication

for

## M.O.(P.H.C.)







## GENERAL INTRODUCTION

To change behaviour, people need to know exactly what is it they have to do, how to do it and where to seek help for it. Earlier a typical family planning IEC product might have been a poster showing a rich, smiling, small family in contrast to a poor, unhappy looking, large family with a message explaining the visual. But today, communication about reproductive health needs are required to be much more focussed and call for specific action to be taken by people at large. For example, Communication activities for promoting family planning today will certainly need talking to the spouse, about various contraceptive options and even advice some couples to visit specific clinics for counselling. In some cases it may also provide necessary information about various contraceptives for adopting family planning methods. In other words communication in RCH has to be specific, depending upon the needs of the clients.

Earlier communication was more of a one-way transmission of messages from a source to a receiver with an aim towards producing some kind of effect or impact. The effect of such efforts generally remained limited to making the receiver aware of a new product, a course of action or a point of view. The social process of communication or the impact or influence of communication on behaviour did not receive the priority due to it. However, now communication is not only required to increase mutual understanding but lays the foundation for mutual agreement, and also helps people to act on what has been agreed upon as well as understand it.



## **UNIT - I**

### **COMMUNICATION FOR BEHAVIOUR CHANGE**

#### **LEARNING OBJECTIVE**

After going through this unit the medical officer will be able to:

- Appreciate the role of communication in influencing behaviour change.
- List out the important behaviour indicators.
- List out various components and explain their interrelationship in communication process.

#### **CONTENT**

- Communication for behaviour change.
- Important behavioural indicators.
- Communication process and distortions in it.

#### **INTRODUCTION**

Being a team leader at Primary Health Centre (PHC) your responsibilities extend beyond your being a doctor. So far you have been planning, implementing, monitoring and time to time evaluating different RCH activities in general within your PHC area. Often you must have experienced that things are not improving as desired by you, despite your team members co-ordinated and sincere efforts. One of the major contributing factors for the achievements levels being

below the desired level is the lack of required knowledge about communication skills among all of your team members. Under RCH Programme, when you have to undertake decentralised and bottom-up approach for planning, and operation, you are also in requirement of having clear knowledge about the role of effective communication in influencing behaviour change, factors that influence behaviour, and also about the process of communication.

If your entire team at PHC and at sub-centre communicate and interact with clients effectively it will influence your PHC's image, as well as your own as a manager. This effective communication will also facilitate you to seek people's participation and help you to achieve objectives set by you.

### **Using Communication for Behaviour Change.**

To keep the staff, clients and community motivated, you need to communicate with them frequently and with a greater commitment than what has been happening in the past. However the term 'frequently' is relative and therefore, it is left to your discretion. For example, at the outbreak of an epidemic, you will need to communicate and interact with your staff every day, may be 2-3 times a day. While on a routine basis at least once a week. On the other hand, the frequency of your interactions with the community members and clients will be situation driven and thus should be planned so.

Generally people wish to talk about their health to their friends, peers and relatives. They also wish to know and be assured about their health status. They want to discuss about it with competent and caring health providers like you. If motivated they are also willing to change their health behaviour. Effective communication through interpersonal communication, with the support of television/radio or even print media, can facilitate to motivate people to change the behaviour patterns.

You communicate with people in different capacities. For example: You communicate with patients at the PHC/sub-centre as a doctor; with your health staff at the PHC and sub-centre as a manager;



and with community members as a representative of health delivery system of the government. At each of these three situations you are expected to influence ideas, knowledge and even behaviour of your patients/clients, your staff of PHC and even people at large.

You must have realised that as and when you communicate with people with purpose and with attention their trust and confidence on you and on your PHC increases.

In RCH programme, IEC has a specific role to play in terms of affecting changes in health practices of people. The word health behaviour refers to peoples' and the communities' existing knowledge, opinion, attitudes and practices for their health and its care. Peoples' health behaviours emerges overtime through the process of acquiring new information and knowledge (awareness) about their health and its care which lead them to form opinion, attitudes (favourable or unfavourable) and acceptance or rejection in real life situations. The changes in peoples' behaviour also require a process of transmitting and sharing RCH information which will improve both your subordinate health providers' and their clients' levels of knowledge, scientific attitudes, towards health care and health services. This also will motivate people at community level to adopt new RCH care practices.

In the process of this shift from awareness to behaviour change, your role is extremely important. While prescribing medicines for example: if you talk about preventive and primitive measures about the disease that has been diagnosed, it is likely to be accepted and acted upon. Almost every time than when the same messages are given by any other health functionary at PHC. The core of communication in RCH Programme hinges upon behaviour change.

For this purpose you must know the type of health behaviour which needs to be changed. Health behaviour varies from one person to another, from one household to another, from one cultural/social group to other. This variation among people calls for assessing the health behaviour in much detail so as to develop suitable activities that would facilitate change in behaviour.

## FACTORS THAT INFLUENCE BEHAVIOUR

To a large extent health status of individual households and communities are determined by their health behaviour. It is important to understand the nature of health behaviour. The nature of health behaviour depends largely on the impact of the following key factors:

- Physical.
- Socio-economic.
- Psychological

The **physical** environment of an individual has an important impact on his/her behaviour pattern. For example people who live in the desert region of the country do not bathe, wash or clean frequently. The reason being, there is an acute water shortage in those parts, so with the water they get, they try and store it for drinking purposes. Hence foregoing personal cleanliness routine becomes habitual to them.

At the **socio-economic** level, the impact is very significant. In communities where the women are the bread winners the behaviour pattern of the entire household focuses on that need. Even the newborn babies have to adhere to that. For example in some areas in Rajasthan, women give opium to their newborn so that the babies sleep while they work. This naturally turns the children into complete opium addicts.

And the **psychological** factor that influence behaviour pattern are practices or traditions which a particular family or community has been following through the ages. These practices have no logical base to it, but have deep sense of loyalty and family pride to it.

The Block Extension Educator can provide you the different health behaviour patterns in the area and also segments of audiences who are following these behaviour. With this information you will be able to draw out the appropriate communication action plan for your area.

As an illustration, there are some important behaviours which may be considered for change or to be encouraged as role model for others. These are :

- **HABITS (Repetitive)**
- **SERVICE BEHAVIOUR**(Related to health seeking and utilization behaviour)
- **MANAGEMENT OF ILLNESS EPISODES BEHAVIOUR** (At household level).
- **HOUSEHOLD LEVEL BEHAVIOUR**
- **SOCIAL BEHAVIOUR** (Related to Indian social environment)
- **ENVIRONMENT BEHAVIOUR** (Physical)

## **Habits**

These behaviour occur daily or at regular intervals. They can be positive or negative. Habits are more difficult to change because they involve replacement of a well-established routine. Once a routine is set, individuals do not think about why and how they are performing a behaviour. The communication support in this case has to be for a longer period of time and may also require more than one media.

*Example of positive habits:* Hand-washing with soap, keeping food covered, etc.

*Example of negative habits:* Smoking, drinking alcohol, etc.

## **Service behaviour (health Seeking Behaviour)**

This behaviour involves contact with a health provider. Service provision generally occurs outside the household setting. It may involve travel to the health post/clinic, either within the village, or outside it.

*Example:* Receiving ANC and TT injection from the female health worker.



## Management of illness episodes behaviour

Management of an illness episode is a set of behaviour involving several individuals at different levels of decision making. A large proportion of health care occurs within the household. The management of an illness episode is a complex combination of decision making within the family and interaction with a health provider. It involves decisions related to diet during the illness, the time family members can give, and financial resources required to manage the illness.

*Example:* Treatment of ARI or diarrhoea in a child.

## Social behaviour

Certain behaviours are dependent on the influence of society, practices at community level.

*Example of a negative social behaviour.* In spite of the fact that the legal age of marriage is 18 years, girls are married between 13 to 15 years. Parents are aware that it is preferable to get their daughters married later, but as there is social pressure to marry them off at a younger age, parents comply.

*Example of a positive social behaviour.* Some parents start sending their children to school after observing that neighbours want their children educated.

**Your IEC activities of the PHC thus have to be based on:**

- **Focus on practice changes instead of awareness creation.**
- **Develop activities about IEC which are audience centred rather than general IEC activities.**
- **Develop need specific IEC activities.**
- **IEC activities have to be monitored.**



## COMMUNICATION PROCESS AND DISTORTIONS IN IT

Communication is a process in which people exchange ideas, facts, feelings or impressions in ways that each gains a common understanding of a message. It is essentially a bridge of meaning between people. The ultimate purpose of the exchange of meanings is to change existing behaviour of people where those are needed. Communication consists of wide range of activities, such as listening, reading, writing, talking. These behaviour occur over time and often overlap with one another. During of operation of these activities what happened (told, read, seen or heard) about a particular health problem or its care has a bearing on what is happening now. What is happening now will influence what will happen in future. So in one way it is an unending process, but it can be directed to a desired end. As a doctor when talk to a women or a group of women about breast feeding, you are to carefully listen to them as to why they were not presently practising breast feeding to their children, or not adopting ante-natal care. This careful listening will provide you enough clues to share your knowledge in order to react a common understanding. Besides, you could request your block extension educator to initiate some activities to take care of the identified deficiencies and t help women at community level to understand why breast feeding and the antenatal care are important for the children, and for the mothers. This will most likely to motivate them to practise those in real life situations.

The communication process can be considered as a system that involves an interrelated, interdependent group of components working together as a whole to achieve desired outcome. That is the reason why communication process is often described through its major components, such as 'source' (sender), message (encoded in words, signals, gestures etc.), channel (physical, mechanical or electrical means to carry the message from 'source' to 'receiver'). Receiver the person or group who get the signal (or message) and decode it as per his/her or their's perception. The receiver then send his/her or their responses taking help of appropriate channel, or simply by accepting and doing the action suggested. This response (or action, reaction) is

called 'feedback'. In real situation of a discussion source and receiver mutually inter change their respective positions.

However it is essential to understand that the smooth working of the above process will get hampered if there is any kind of **distortion** in communication. Experience has shown that most often the message implied is not the message received. For example if you have entrusted a particular team member with an important job, and the response to the activity is below your expectation. You perhaps express your concern in that matter. It is important for you to explain to the team member that your dissatisfaction is not due to his/her performance but with the design and planning of the activity. Then only the process of communication will be completed correctly.

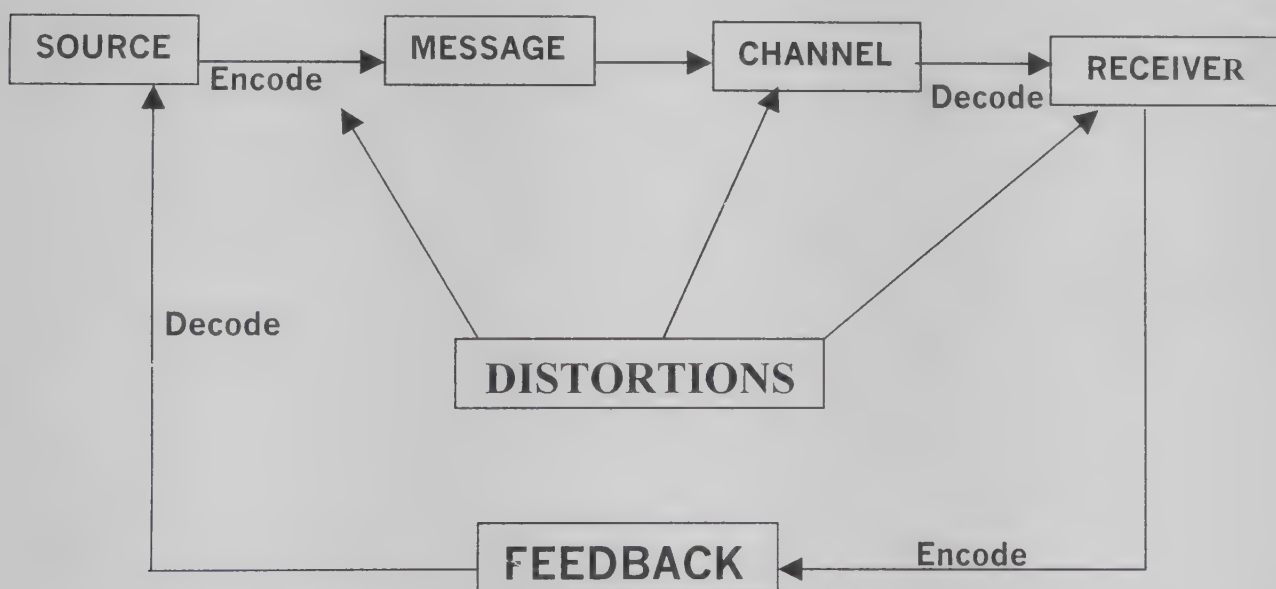
There are several reasons that a message may get distorted. Some of them can be:

- In case the source's or the receiver's verbal message do not comply with their respective non-verbal expressions distortion may emerge in the communication process. Besides, the channel through which the message is transmitted may have a defect, e.g. the telephone set through which the message is being conveyed may be defective because of which only part of the message is received. Due to this, the meaning of the message received may be completely different from what was sent.
- Distortion may emerge in the encoding of message by the source and also in decoding of the same message by the receiver. There may be a knowledge gap between the sender and receiver, e.g. the sender may be a well-educated person giving information on the use of pesticide, while the receiver may be an illiterate farmer. If the sender is unable to translate his/her information in the language that is understandable to the farmer, then the process of communication in this instance will be incomplete and dissatisfactory.

- The timing of the message being delivered may not be suitable to the receiver.
- If the message does not highlight any benefits for the receiver, the information may be misconstrued, etc.

Thus messages sent should be clear, understandable, simple and relevant to the receiver. Special attention should be given to avoid distortion and disruption in the message transmission. Monitoring, at each stage therefore becomes essential, as does feedback, between the sender and the receiver.

This communication process can be depicted through a model for your better understanding. The model is given below :



## **KEY POINTS**

- Frequent Communication provides the ground for community participation.
- Proper motivation can lead to behaviour change.
- If communication is effective then the trust and confidence of the people increases in services.
- To change behaviour, health behaviour of the people need to be identified.
- Importance should be given to avoid distortion of messages.

## **TEST QUESTIONS**

1. How does motivation help in behaviour change?
2. How is communication a key to behaviour change?
3. What are some of the important indicators for behaviour change?
4. What are the important factors in the communication process?



## **UNIT - II**

### **INTERPERSONAL COMMUNICATION & COUNSELLING**

#### **LEARNING OBJECTIVES**

After going through this unit the Medical Officer should be able to :

- Describe the importance of different interpersonal communication skills in improving the effectiveness of the health team and the quality of RCH services.
- List different IPC skills – non-verbal skills, effective speaking, active listening and interviewing skills and describe their application in performing different job responsibilities.
- Recognise the use of IPC skills in improving the image and credibility of the Medical Officer and his team of workers among the clients he serves and the community at large.
- Know the basic concept of counselling.
- Demonstrate and practice counselling skills and techniques appropriately.

#### **CONTENT**

- What is IPC?
- How to be an Effective Speaker
- Use of verbal and non-verbal skills
- To be an Active Listener
- Questioning / Interviewing skills
- Tips for good interpersonal communication.

- Attributes/ Qualities of a good counsellor.
- Counselling techniques.
- Counselling skills.
- Helpful tips in counselling

## INTRODUCTION

### What is Interpersonal Communication (IPC)

To a Medical Officer conducting IPC would mean sharing words, feelings and emotions with the following categories of people:

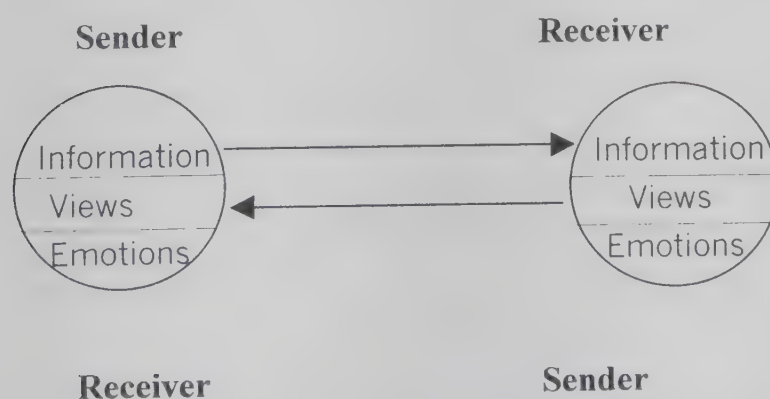
- At an individual level** – With a patient, a couple or a woman with a low weight baby. Man in the reproductive age, mother with a child, adolescents accompanied by an elderly member of the family or alone
- With a Small Group** (e.g. Panchayat, Mahila Mandal, Youth Groups, etc.) a group of teachers, with the NGOs and with representatives of other government departments at the block level.
- With a Large Group** (e.g. community speech on Population Day) addressing a school gathering or the meeting at PHC of all the sub-centre staff

‘Interpersonal’ is about the relationship that people form with each other. A communication that occurs in such a situation is called Interpersonal Communication. This communication can be spoken, silent or conveyed through gestures as well. Equally important is that communication has to be participative, drawing both the people engaged in a IPC situation in a dialogue, even if one is more active than the other. For a successful Interpersonal Communication to take place it is necessary that each individual engaged in IPC should feel benefited or rewarded with the experience of sharing views and thoughts, and not cheated.

To understand in simple words what interpersonal communication is, let us talk about the people you meet in everyday life. List out the names of the people you generally interact with or with whom you would like to share your problems and hopes. Your list will have all those names with whom you talk easily and have shared your problems as well. Would it be right to say that one quality that draws you towards them or an individual is the feeling of a common bond? Perhaps yes! In other words, establishing a common interest and common meaning of words between two persons is the key to successful communication. You generally wish to interact with a person with whom you share ideas, feelings, emotions freely and comfortably, such as your friends, your family members or families you visit etc. For interpersonal communication, common purpose keeps people together.

**To engage in an IPC situation three basic elements are to be considered:**

- All communication must take place in close proximity i.e. individuals should be face to face with each other.
- The process of sending and receiving messages should be ensured.
- These messages include both verbal and non-verbal stimuli.



Two way transmission between two or more persons of

- Information
- Views
- Emotions

Let us see how aforesaid discussion on IPC has relevance for a Medical Officer like you in serving your patients, delivering quality care and in ensuring an efficient management of medical and health services at the Block.

- Effective and conscious use of IPC by the MO will help in educating the beneficiaries of health services on the preventive as well as curative aspects of health.
- IPC is the only effective way of counselling on specific aspects of health care to the target and critical group.
- IPC helps to provide feedback about the quality and type of health services made available to the community.
- It helps to evaluate the level of satisfaction among the patients, their families and the community.
- It helps in removing misconceptions and rumours associated with contraception, sterilisation and even medication and treatment for Diarrhoea, TB, Malaria and many other health issues.
- Effective IPC will enable you to create a positive picture of the health care system among the people you serve and establish a rapport among different sections of society in the PHC area.
- IPC helps in resolving conflicts, facilitates problem-solving, promotes consensus on common goals.
- Organisationally, an effective communication is a potent tool for co-ordination, supervision, control and goal-achievement.

### **Why IPC**

Let us try to assess for a while, as a Medical Officer of your PHC what percent of your daily office time you usually spent on interpersonal communication (IPC) as described above, besides your medical and other technical activities. This, perhaps will be more than 80 percent of your time. You listen and talk to patients who have been brought to your clinic, also with relatives/friends who accompanied her/him. Then you talk to your team members for what actions to be undertaken for curing the patients and also what preventive and promotive services to be emphasised in the PHC's outreach activities. Besides, getting regular reports from LHV and BEE often you are to make visits to villages for discussion with village level



leaders, to attend meetings and health camps, etc. Besides, you meet officers and personnel of other related departments for more effective inter-sectoral co-ordination. In all such activities you have to get yourself involved in IPC with one or more persons.

The image of yourself and also of your PHC as local unit of health services provider will largely depend on how effectively you conduct your different IPC sessions. Your skills for effective IPC will not only improve your own and your PHC's image in the eyes of the client of the communities, but also to your team members of the PHC and other officers in related other departments. The cumulative effects of your good communication activity will help improve the overall effectiveness of health services provided by your PHC..

You have appropriate communication skills to influence the people's behaviours, such as, helping people accept small family norm, making them use contraceptives, accepting immunization for their child or even mobilising the Panchayats to cooperate with you in health activities like arranging for transport for referral cases. You can use your communication skills in a variety of other situations like inviting other government department representatives to cooperate in the delivery of health services in difficult or remote areas.

**This unit helps you to understand major interpersonal communication skills:-**

- Non-verbal and Verbal skills.
- Effective Speaking skills.
- Active Listening.
- Interviewing skills.

Using these skills while you are providing services and practising them in your daily work situation can help you to achieve the goals of patient's care and their satisfaction.

**Let us begin with each of these IPC skills and see how to use them to get maximum results.**

## **SELF ASSESSMENT**

In your daily work you deal with mothers, married women and men, young girls and boys and young children. They talk to you about their health problems and wish you to know about them in detail and seek solutions and treatment from you. You may have noticed that they do not understand much of what you have said since you have a set of specialised knowledge and Language which is not known to them. You see this in their eyes or perhaps a gesture- of hand or head – which suggests that your words were either understood or not understood and a different meaning was given to your words.

For example, when you talk to a mother about ORS (oral re-hydration solution) you can see through her gestures and eye contact whether your instructions are helping her to make this solution by herself for her children or she has actually not understood what you have told her.

**Ask yourself following questions when you communicate with your Patient/Client**

- **Are you Sharing your knowledge?**
- **Are you Communicating with a purpose to ensure ready acceptance of your advice?**
- **Are you making communication a rewarding experience?**
- **Are you giving solutions and not just prescriptions?**
- **Have you given specific directions?**
- **Are you ensuring free and easy communication?**

Out of these six areas if you have left some aspect, please improve upon the same.

### **\*EFFECTIVE SPEAKING**

A person is not only known by what he looks or even the clothes he wears, but also by the manner in which he speaks. Many a times a

person spoils the impression or makes an impression by speaking in an in-effective or an effective way.

While speaking either you give information or you receive. What you say to your client is very important to him/her. For this you have to watch **what** you say and **how** you say it.

You may ask, Is it important to be an effective speaker, as long as I am giving the right information? Not just you but many of us think that we have good communication skills as well as we can give correct information. You would however agree that inspite of your clear-cut directions and spending a good deal of time with a patient more often than not the effort has gone waste! Equally important is how this information is given to the client.

It is an important skill for you to learn. How to use your persuasive skills in motivating and influencing not only the reluctant contraceptive users but also your supervisors in health services and the important opinion-makers/decision-makers in the community.

You may feel that as a Medical Officer you could inspire confidence in those around you because of your interest in serving them, your dedication to your profession, your efficiency and knowledge and the obvious interest in helping to meet the needs of others. This is a good attitude to have. Effective speaking skill requires, to begin with, understanding others attitudes, feeling and needs and then learning how to communicate appropriately. However, more often there is a tendency to speak in an impersonal way while doing a routine job.

\*How does this happen? Just examine this conversation between Dr. Kewal, a Medical Officer posted at the PHC, Bakhra, and Dinkar who is a father of three children and lives by working as a farm labour on one of the big agriculture areas in a village under the PHC.

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\* During the training session, the facilitator may emphasize the importance of 'Effective Speaking' with the help of appropriate examples.



*Dr. Kewal*

What is the problem with you?

*Dinkar:*

Nothing really. I came to find out if I can have some medicine to make me feel better. I get tired very easily and cannot work properly.

*Dr. Kewal:*

You people need to eat properly and take regular diet. Medicines alone will not help.

You have to eat properly and come for check-up. Is it understood?

*Dinkar:*

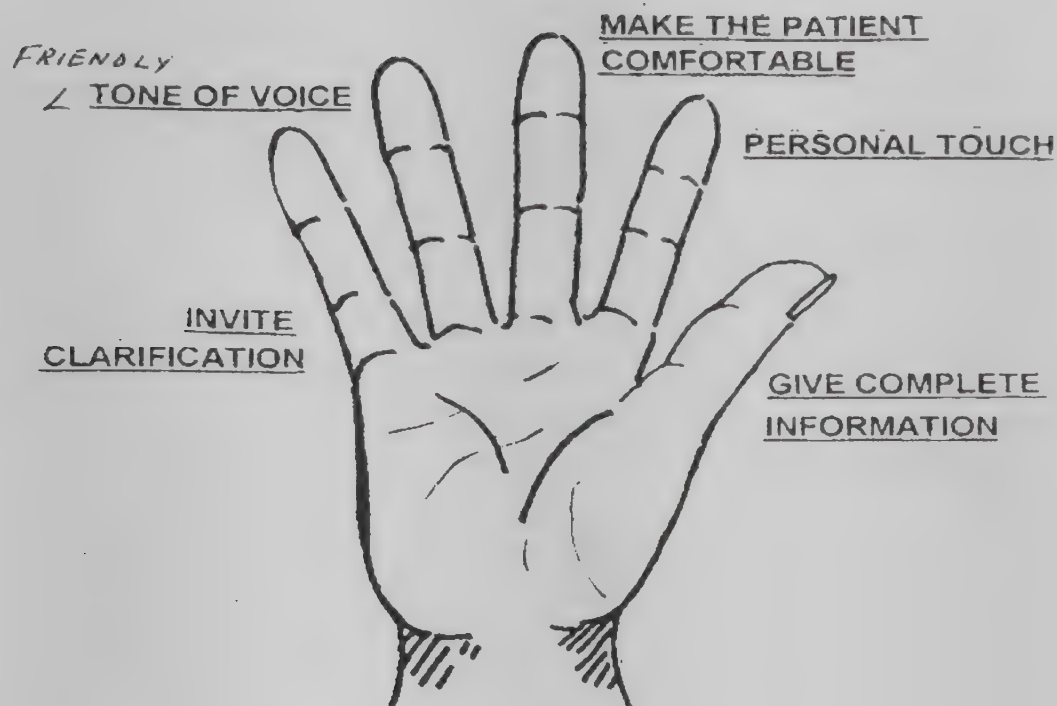
Yes (In a disappointed tone)

### **WHAT HAS GONE WRONG ?**

1. Dr. Kewal's questions and remarks are not comfortable to Mr. Dinkar (without any smile or greetings).
2. Dr. Kewal could not make his voice friendly to encourage Mr. Dinkar to say more in detail about his illness.
3. A personal touch with using the name of the patient is missing in Dr. Kewal's questioning and remarks.
4. Information collected and given by Dr. Kewal were not complete and also not clearly understandable to Mr. Dinkar.
5. No clarification about the patient's illness and about the improper or the proper diet and problems for regular check up, were asked.

Rectification of the above mentioned five nos. mistakes while speaking to a patient is the core of making our speaking effectively. These five elements of effective speaking are shown through picture of a human hand with five fingers, as below :





### **The five dos in Effective Speaking**

- During the training session, the trainer may select two trainees and conduct a 'Role Play' session from the above given script.

Let us use the above-mentioned guidelines and see what happens now.

Dr. Kewal should have spoken to Dinkar in the following way to ensure that he follows instructions and comes back for check-ups on a regular basis.

*Dr. Kewal:*

It is nice to see you Dinkar. You do not look good. Tell me what can I do for you?

*Dinkar:*  
*(The client):*

Doctor Saheb, I was feeling a little apprehensive about coming here, but I can no longer postpone treatment for my condition. For sometime now I am not feeling my usual self and get tired very easily.

*Dr. Kewal:*

Can you tell me more specifically about your diet? What do you eat during the day? It is important to establish what is the problem. And what will be the course of treatment for you.

*Dinkar:*

Yes! Saheb, I cannot take a long treatment because I am a daily wage earner and I cannot afford the bus fare.

*Dr. Kewal:*

If you get well soon you will be able to work better and earn more. You have to get the blood and urine test which can be done here but the result will be known only tomorrow.

*Dinkar:*

What you say sounds reasonable. My supervisor will not allow me to be away from work. But I can make him understand that if I remain ill his farm work will suffer.

*Dr. Kewal:*

You will be a strong man again if you keep yourself happy, eat proper food and come for check-ups regularly. You have young children and a hard-working wife. Look after them and your health.

*This is the way you can start your conversation:*

- Pick up a topic that interests the person you are speaking to and relevant to his/her needs and experience.
- Use short sentences and easy to understand words. Avoid technical words without explaining their meaning.
- Explain facts by giving examples from real situation which are drawn from the client's own life.
- Introduce key issues in the beginning of the presentation, repeat them when you are half way through. Round up the discussion by highlighting the issues, the resolution of the problem, decisions and the final action to be taken by the participants/ individuals.

How will the client remain interested in what you say? By keeping your presentation centred around following leading points.

### **INVITE CLARIFICATION**

### **TONE OF VOICE**

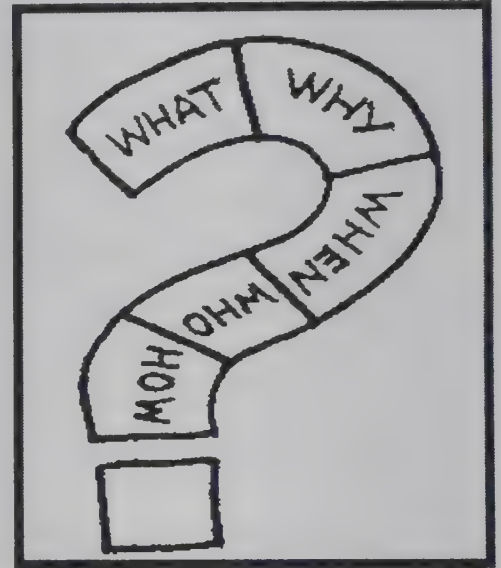
### **MAKE THE PATIENT COMFORTABLE**

### **PERSONAL TOUCH**

### **GIVE COMPLETE INFORMATION**

### *Be clear about:*

- **What** is to be spoken
- **Understand** why you are speaking to the client  
( the objective of the presentation)
- When **action** is to be taken by client and where
- How the **task** is to be achieved and with what results
- Who are the **key participants**



### **NON-VERBAL AND VERBAL SKILLS**

Many a times you must have faced a situation when what you said evoked no reaction from your listener. It could be someone in your family, your colleague, or an expectant mother visiting your PHC. Surely you must have thought that it was `their fault (ignorance) if they failed to `understand' what you explained. Many a times a gap occurs in what you are saying and that being your body posture, the look in your eyes or the tone is conveyed. If the spoken words don't match with your body language, the chances are fail in conveying the real meaning of the spoken words!

#### **Body language**

It is not only important to say what you wish to, but more crucial is how your body says it! Without saying a word, you can reveal your feelings and attitudes. With the way you handle your body and eye contact. For example the smile on your face gives a signal that you are "happy" and if you are angry you convey that by `glaring' at the person and not saying a word. The ways you use



body, eyes, facial expressions to convey meanings and feelings are called non-verbal communication or body language skills.

Understanding body language is spontaneous and provides an understanding of the inner meanings that a person attaches to a particular sentence or a phrase. Pay close attention to body language as more often it is more believable than verbal communication. For example, when you ask a close friend "What's wrong?" Your friend may assure you with words that nothing is wrong. But the frown on the face, the bent shoulders convey and reveal that something is still bothering him. You can clearly make out that what is being said in words may not always be the reflection of the intentions. It is important that there is a perfect matching of words with body language. Your words should also convey the same meaning through **gestures, facial expressions and posture**.

Verbal Skills are very important part of your speech and give you a distinct personality from others. It is like having a special cut, a perfect line and length that makes your clothes stand out from the crowd. The pitch and pace of what we say are important characteristics of our speech delivery. There are some who have a habit of raising the sound level or speak so fast or slow that these elements become barriers in any interactions. This needs practise in reducing the exaggerated elements in your speech. Speaking to a patient, in an exaggerated tone or rushing through the details with fast speech delivery especially with an illiterate person, or a woman may confuse them about what you are saying. The tone of the voice also establishes a speaker's real intentions behind his speech. Your tone explains much more than your words. Out of habit, our tone with patients depends how well we know them. It indicates our closeness or sincerity. We bring lot of warmth or curtness in what we are saying when we talk to a friend or a stranger. The medical officer with the right tone and pitch of his voice can win friends and favours of his client.

Equally important is the **space** or **distance** you maintain between yourself and the other person with whom you are communicating with. This indicates the degree of closeness in

relationship i.e. if you are very friendly with a person you will get close, but if still keep some distance it will suggest to an observer that the relationship is only formal.

### ***USING VERBAL AND NON-VERBAL SKILLS***

Thus there are various ways in which you can communicate with your clients either individually or in groups. You can communicate through **\*Body movement, \*Voice level, \*Facial Expression, \*Eye contact you maintain, \*The tone of your speech.** All these expressions either confirm or contradict what you say through words.

Sometimes people feel uncomfortable expressing their emotions in words. You should be able to identify this through body language. It is important to recognise non-verbal clues to assess client's feelings and at the same time be aware of the feelings and emotions we may be non-verbally communicating to our clients.

The Medical Officer should demonstrate **\*ROLES** i.e., the non-verbal communication more effectively. To do this follow the physical postures given below:

- **Relax**
- **Open & approachable**
- **Lean towards client**
- **Eye contact with whom you talk**
- **Sit squarely and smile**

Trainer may pick-up examples of gestures, tones, distance from the participants.

## ACTIVE LISTENING

Listening is the most important activity in a process of communication. Often in common parlance the words 'listening' and 'hearing' are used interchangeably. But, in real sense listening is different from hearing. Hearing is merely an physiological action. Any sound, word or sentence that come to our ears is a hearing activity. While listening involved interpretation of what we have been hearing from others. When we attentively hear something it usually goes to our brain (thinking organ) through our eardrum and it get processed there in order to understand or comprehend the real meaning of it. So listening involves psychological action.

Most of the time when we listen to something or someone, after a few hours we forget.

♦ Stop here for a while and test yourself and see if it applies to you.

Try and remember the conversation you had with your first five clients today. If you haven't met any client today then perhaps yesterday. Don't look at your notes (if you've made any). First shut your eyes and try to remember. After a while open your eyes and write down all that you remember. Check what you've written down with your notes. You will see, in all certainty, that you were able to recall only the gist of the conversations. You probably forgot some very important issues that were discussed.

This happens when the message that was being transmitted was not being listened to. In other words, when the person was speaking to you, you, did not pay attention to all the details being told to you and allowed your mind to listen only what you felt necessary. Fortunately, you are not the only one to encounter this. It happens to all of us and all the time. We tend to listen selectively and in process lose some important cues.

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♦ During the training session, the facilitator may demonstrate "ROLES" for the benefit of the trainees.



It is important to point out that our mind does not wander all the time. For example, when we sit and watch our favourite television serial, our listening powers are remarkably sharp, alert and receptive. Without much of an effort we can instantly recall dialogues from old films, words from long forgotten film songs, conversations with friends, etc. At such times, you will feel wonderfully confident about your listening skills. But at other times when you need to store important information in your memory bank you will find your listening skills have let you down.

## How to Listen

Following are three simple ways that will help you improve/develop your listening skills:

<ul style="list-style-type: none"> <li>• <b>Be attentive</b></li> <li>• <b>Comprehend what your client is saying</b></li> <li>• <b>Absorb clearly</b></li> </ul>	
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If you make them an essential part of your listening habits, much of the hurdles in understanding a patent's reluctance to use and act on your advice will be clear.

## Be Attentive

For listening, it is not enough to sit back and let words flood all around you. You need to concentrate on the spoken words. To do this, as well as to increase your attention span, it is very important for you



to see the speaker while he/she is speaking. Watch the speaker at all times. His/her facial expressions and gestures will help you to assess the focal point of interest in the talk/speech.

Let us illustrate this point through an example. Suppose during a regular ante-natal check-up, you find that the weight of a mother is not appropriate, according to your chart. In answer to your question she tells you that she's taking proper rest and diet. But since your chart shows that the mother is not gaining weight as she should, listen carefully to her replies and watch her while she's doing so. If she is not giving the complete truth, you will be able to make out by some kind of a gesture or expression she makes while talking.

Maybe she will refuse to make eye contact with you or fidget with her saree. In whichever fashion, unconsciously or consciously, she'll give an indication or sign. This should be enough for you to probe further and find out the reason behind the inadequate weight gain. Now, if you had been busy doing something else while she spoke, like looking at the prescription pad or thinking of the likely visit of the CMO in the week you could very well have missed the sign or the signal and not investigated further.

Another advantage of being able to see the speaker is that the voice follows the eye. Keeping your eye fixed at the speaker you will be able to listen better than by simply hearing without looking at him.

Of course it is very well to say that one must concentrate and give full attention to the speaker always, but in reality it is not always possible. So, whenever you feel there you are not able to concentrate take down notes. The notes need not be detailed and exhaustive, just write point-wise. This will help to jog your memory later on as well as aid in comprehension and absorption.

### **Comprehend what your client is saying**

The process of communication is incomplete if what the speaker says is not understood by the listener. A message sent is of considerable less importance than a message received. Only if the

message is understood and comprehended will the process be complete. And to do this the listener must keep an open mind. Sometimes we decide, rather quickly, that either the subject or the speaker is boring and what is said makes no sense. Therefore, we tell ourselves that there is no sense in listening because there is nothing new to hear or learn. But this may not always be true.

As a listener you must be willing to hear and think without any preconceived biases.

Therefore it is very essential for a listener to remove as many mental barriers as possible. Again it is easier said than done. It takes a lot of practice and self discipline to fully accomplish this.

So to make it easier on yourself you could take down short notes. Note taking also helps in keeping an open mind and ensures that you don't switch off. We have to shed off the mentality that note-taking is only good for students. It will be of value in estimating the real needs.

However, we would like to put in a word of caution, with regard to note taking. Even though it is suggested that note taking helps the listening process, yet trying to put down every thing the speaker says on paper is bound to make you lose some of the matter. Spoken words come out faster than we can write them down. Therefore you must be careful about note-taking. Try practising short-hand and write in points.

### **Absorb clearly**

In your day to day life, you must have experienced the frustration of constantly remembering and forgetting things. This is a common phenomena that happens to all of us from time to time.

As a Medical Officer, apart from your medical duties, your main work health is interacting with various kinds of people, like your clients, community members and your own team members. In the course of your interactions, you exchange views, you inform, you counsel, you conduct interviews, attend meetings, etc. While you are

doing all these activities, listening constitutes a critical part in all of these. If you listen attentively or with concentration, you will be able to understand or comprehend what is being said. And if you understand, then you will be able to absorb or take in and retain the matter in your memory. All that you listen needs absorption for taking action. That will bring up the performance level and help you to grow as a professional. Many a times we dismiss what we have listened to. Most of what you listen to while talking to the client, community groups and your staff can be of value in taking action/modification of the services delivered. This will happen only if you have allowed yourself to take in words of wisdom.

## **QUESTIONING / INTERVIEWING SKILLS**

### ***What is an Interview***

To describe what an Interview is to understand a situation in which you want your clients or the community to provide you with crucial information. Interviewing a client and the person accompanying him or a group from the community helps you to get answers to a set of questions. These answers become like signposts on the road. They guide you in understanding what kind of services are most needed and who needs them most in the block. These questions may relate to finding out why some women from your block area are not willing to accept contraceptives or if men have misgivings or doubts about vasectomy or no-scalpel sterilisation.

Questioning/Interview skills may be of help in a situation of history taking as well when a pregnant woman comes to the PHC for the first time. For you, she may be one among many clients but for her, you are someone special, who can help and guide her through an experience, which will be exciting and memorable. You may be in a hurry to ask questions since you have many more patients to talk. But for her, this is the first opportunity to share and tell all that she has been experiencing about the first pregnancy. This is going to be difficult. She has never spoken to a stranger about such personal things. If you are not able to ask meaningful questions, she may find her interactions with you uncomfortable and may give information



which is readymade. This information may not allow you to analyse her true.

Condition and your diagnosis and prescription for her may be off the mark.

The type of questions you can ask are important for you to gather information. Where you meet patients who come from a disadvantaged background it is possible, that you may not be able to elicit right and adequate information from them. Let us see why asking questions is a skill and helps you in your performance.

### **Questioning is essential:**

- **To gather correct and relevant information**
- **To identify real problems**
- **To demonstrate an interest in the client**
- **To understand particular difficulties that the clients may be experiencing**

*The type of questions we ask and how we do that determine the kind of information we get.*

#### ● **How to do an Interview**

1. The tone of voice is important in asking probing questions in a non-threatening and non-judgemental way. Leading questions are never appropriate because they discourage the client from saying what she/he really feels.
2. Interviewing is one of the best and most common methods of obtaining information in a face to face situation. It is important that interview must be entered into with serious intentions and with specific goals.



3. You are in direct touch with clients and ought to know the types of questions you are going to ask and different situations you may face in an interview. It also means that the interview should be comfortable and easy for all participants.
4. When asking questions, it is important to listen to the answers. It has often been seen that while the client is giving answer he/she is stopped by another question without you having the patience to listen through it all.
5. You can use your verbal skills in making the interview a success.

The interview with your clients, especially if she is pregnant or has a sick child needs a particular sensitivity towards her conditions. The Medical Officer should not ask very long and demanding questions but must also make the client comfortable and at ease. The surroundings where the interview takes place also provides some relief to the client. The surroundings should be such where the client/patient feel that there is adequate privacy for expressing her/his health problems. Your own attitude and what emotions you display on your face also helps the client to become positive towards you. This is of great value to the success of the interview itself.

You may speak a common language but if your client does not follow the technical and special phrases that you are using all your effort to get useful and related information will come to a naught. Examine a situation where a Medical Officer made no effort to make a distinction between a leading and an open-ended question.

A doctor is visited by an illiterate and sick female patient. The patient is asked some questions to establish a diagnosis procedure. One of the questions asked by the Medical officer of her was 'Did you have your meals coming here'?

The female patient promptly answered in negative even though she had some snacks on the way.

**The lesson:** The doctor failed to take notice that he had asked a leading question, which did not allow the patient to give the correct information. For the doctor to assess if the patient was empty stomach, an open-ended question would have given a clear picture. An open-ended question – “can you tell me if you have eaten or had something to drink since early morning”? The patient gives a complete list of snacks and drinks she had though she skipped the proper ‘meal’!

**The lesson:**

- **The language must be adapted to the situation and to the level of the client.**
- **Questions are phrased in easy to understand language**
- **Make the patient comfortable by your body language like an encouraging smile, a nod in the affirmative and/an eye contact which inspires confidence in you.**

#### **\* Where and when to use interviewing skill**

If you are doing a meeting with the community leaders or supervising the community Need Assessment survey you will have to go to the community members for seeking information. In such a situation interview skills come handy. There may be a need to gather information from your LHV or Health Workers about the problems being faced in conducting deliveries or immunisation respectively. Similarly if you are taking the history of a client you need to ask questions in such a way that she is able to give answers not in 'yes' or 'no' but in specific terms and even in greater details. This help in assessing the actual conditions of the patient.

## Use the following tips for good Interview

- Keep the surroundings clean and cheerful so that the client feels relaxed
- Make the client comfortable by being friendly, relaxed and confident
- Ask relevant question in an easy to understand language
- Be a good listener in order to understand the psychology of the patient and interpret their answers correctly
- When the patient poses a problem, should be able to provide necessary inform action, offer solution or give a feed back correctly
- Use non-verbal behaviour appropriately to communicate empathy and understanding

## CONCLUSION

These Interpersonal skills shared enable you not only in establishing a rapport and a sustainable relationship with your clients but also provide you necessary help and support from community leaders and people's participation in key programme areas of RCH.

These skills can also give you results when you work with other health providers especially with Health Workers, LHV, BEE and other even NGOs.

Using IPC skills with the health team at PHC you as a Medical Officer encourage support and co-operation of all members for quality service delivery.

## INTRODUCTION TO COUNSELLING

Counselling is a process of enabling the client/patient to express her/his feelings and create a physical and psychological environment in which the client feels confident enough to take his own decisions.



The work of a counsellor may appear easy and easy to master. In reality it is a job which requires an extra effort of

- Managing
- Concentration
- Energy
- Patience.

Equally important are your hold over the professional knowledge and the socio-cultural milieu of the Block and the District. As a counsellor, you may or may not have already experienced to switch off your own opinion and **judgement**, while providing your client with **unbiased** views and as well as **your attention**. This is an extremely difficult task to perform. Before we go further, we would like you to remember that this unit gives you guidelines for you to consider while counselling. The examples may not be an exact duplicate of the situation you may face in your work place but there are similarities that remind you of your own PHC clients. These have been given for easier understanding. However the skills and techniques remain the same and may be adapted to any situation you may find yourself in.

### ***Qualities of a good Counsellor***

To be a good counsellor you need to improve and sharpen your skills all the time. Practice makes it perfect and makes you a natural counsellor without causing all added strain on your will and patience. You have to consciously make an effort to have understanding, empathetic attitude and patience towards the client. Your client will need your constant help, support and encouragement to define and express his or her feelings. Remain sensitive and observant to your client's needs.



### **Counsellor as a person**

- **Friendly**
- **Good listener**
- **Helpful**
- **Knowledgeable**
- **Credible**
- **Good Communicator**

### **Counsellor in relationship to the client**

- **Have understanding.**
- **Empathy**
- **Patience**
- **Sensitive**
- **Observant.**

### ***Your Client***

Now that we know the basic profile of a counsellor, the next logical step is, what will be the profile of a client. How do you identify the client who needs to be counselled? There are individual patients who come with specific problem related to their ill health. There are couples with uncertainties about using contraceptives or parents with a sick child. These cases come to you very frequently. What is important for Medical Officer in today's context is to extend the ambit of counselling to areas of infertility, alcoholism leading to domestic violence, families of terminal patients. Of course it is understood that a potential client would be a person who is unable to deal with his/her own problem/problems and needs the help of a person who he/she presumes would provide him/her with solutions.

### **Self Assessment**

Before we go further, let's do a quick test for assessing of your counselling skills:

Rani (Wife) : I'm afraid I will get pregnant again.  
We don't use any contraceptive methods. I already have three children, whom we can barely feed, I don't want any more.

Ramesh (Husband):

If God will's it, we will have more children and if he does not, we will not. I am not going to use any contraceptive methods.

Dr. Mahesh

\* a) To the woman

Since you don't want to get pregnant, why don't you use some method of contraception on your own? You don't have to depend on your husband.

\* b) To the man

If you will not adopt any form of contraception then your wife will definitely get pregnant. When the baby is born, you will have to work twice as hard to provide for your family. God will not help you then only you can help yourself and your family.

c) To both of them

\* You think if you use any form of contraception, God will be displeased. God wants to ensure happy and healthy life for all – do you agree?

Three responses have been provided for the Medical Officer. As a counsellor which one would be your response?

## ***Analysis***

Response A and B are very impersonal. When a client goes to a counsellor with a problem, the last thing he/she expects is being treated in a condescending manner or brushed aside. We all believe that when we have a problem, our problem is the most unique. Putting our problem as average makes us feel unimportant and ordinary. We all have ego, pride, self-esteem, and self-respect in varying degrees and we like to pamper them from time to time.

This makes us feel important and exceptional. Thus being patronising puts the client on the defensive and form a bias against you.

Instead, empathize with your client. Accept their ideas and feelings and gently probe them to express themselves. In other words provide them with verbal prompts. For instance response option C paraphrases the man's feelings, providing the couple with a verbal prompt to express their thoughts on the issue.

## **Counselling Techniques**

### ***Styles/approaches in doing counselling***

- a) Counsellor-centered or authoritarian style: this is the simplest to do as there are no rules to follow-the counsellor gives advices, makes decisions based on what she thinks is in the best interest of the client, and expects the client to follow/heed her advise; it is completely directed by the counsellor.
- b) Client-centered or non-directive style: the counsellor is passive, is mainly a listener; the client is active, expresses herself freely, tells the counsellor what she wants, and after careful reflection, and clarification, makes her own decision.

c) Non-authoritarian style; neither counsellor nor client-controlled, this style in counselling lies somewhere between these first two styles; it uses a variety of techniques:

- 1) Direct (take place during the face-to-face interaction with client): client reflection; ventilation of feelings; providing emotional support (through expression of interest, understanding, assurance and confidence); giving suggestions and advice;
- 2) Indirect (efforts directed at the client's environment): involving people who can be of help (e.g. family members; neighbours); referral to appropriate community resources.

Write this statement on the board and ask the trainees to react/discuss it:

Indian family planning workers, Doctors are generally authoritarian in their approach.

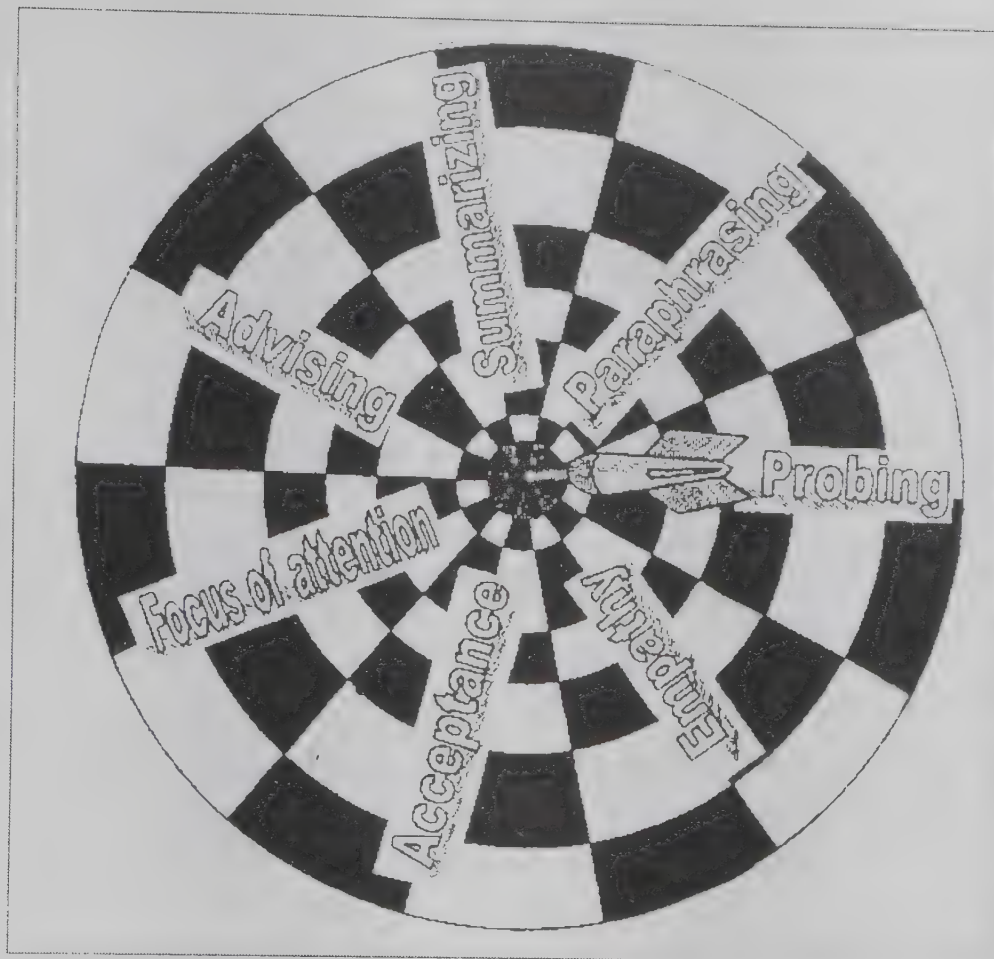
Make the following statement to synthesise the discussion:

A counsellor should not use just one approach. Her approach should not be based on her personal preference or convenience, but should depend on her assessment of the client's situation-her background, her culture. She should avoid extremes, like being too dominant and over whelming, or too passive.

Every session on counselling is an unique experience. Each client's, problem and their solution is different from the other. As a counsellor you must be open-minded and provide your client with all the options and opportunities available to her/him to help them take an informed decision.

Following is a list of seven techniques, which can be used, in your counselling sessions.





*The Seven Counselling techniques that will help the Counsellor to conduct a session efficiently*

In a session a counsellor's efficiency at applying his or her listening skills play a vital role. If you listen carefully and **focus your attention** on what the client is trying to say, you will be able to easily sift through the barriers your client has erected and reach to the cause of your client's anxiety.

As human beings, it is our tendency to pass judgement or, to agree or to disagree with what others say. But as a counsellor it is imperative to overcome these shortcomings, so that while interacting with your clients you are able to **accept** their ideas and feelings. When you do that, then automatically you will **empathise** with your client's situation and your **probing** will be more in tune with his/her thought process. Probing is a particular kind of questioning which is

gentle, and yet allows the counsellor to reach the basic reason of the clients dissatisfaction.

Next is **paraphrasing**. This important technique essentially means rewording a statement or series of statements in the same language and style used by the client. This helps the counsellor to find out whether she has been able to correctly assess the client's needs and requirements.

**Summarising** and paraphrasing may sound similar, but actually they are not. While paraphrasing is restating a statement, by a counsellor in his or her own words, summarising, on the other hand, means listing out the main points of the discussion without going into details.

Finally is the process of **advice**. Here, as a counsellor, you can lay out all the options available to your client. You can suggest number of alternatives, instead of the one or two 'correct' course of action, thereby allowing your client to make his/her own choice.

### ***Counselling Skills***

Apart from the above mentioned techniques, there are a few more skills that you will need to apply for getting a suitable response from your client. These are verbal and non-verbal approaches.



***The Six Verbal and Non-Verbal Counselling skills that must be applied by the Counsellor while Counselling***

We will try to illustrate these skills through an example:

***Example***

Dr. Mahesh who is Medical Officer incharge of a PHC is generally visited by women and old people more than by men. He is sensitive to realize that the health programmes especially spacing and MCH needs the support of the men of the area. He asks Kamala who is going to have her fourth child, to bring her husband on the next visit but preferably on a mid-week day which is less crowded. Dr. Mahesh wants to spend sometime with the couple.

Next week Kamala comes with her husband Chand to the PHC where Dr. Mahesh is examining the patients.



Kamala : Can I come in?

Dr. Mahesh looks up and sees Kamala and her husband Chand standing uncertainly at the door of the PHC.

Dr. Mahesh : Namaste! Yes of course you can come in. (smiles and greets his clients) But would you mind waiting outside for a few minutes. I'll just finish examining two patients and then you can come in.

All the while Dr. Mahesh spoke, his tone of voice was friendly and relaxed. While speaking itself he had indicated using gestures and instructed the ward boy to show them towards a wooden bench on the verandah. Although Kamala sat on the bench, Dr Mahesh noticed that his client did not relax. Kamala seemed tired and edgy and Chand, her husband, restless and apprehensive. Outside, it was early morning, and a gentle breeze was blowing.

The PHC had a small garden in front of it, with a couple of guava, lemon and mango trees on each corner. Although it was the height of summer, the early morning coolness brought about a sense of tranquillity in the atmosphere. The surroundings were favourable towards conducting a counselling session. The crowd too had thinned and Chand would prefer privacy and no familiar face around. Having understood the needs of his clients and ensuring that the setting was also congenial, Dr. Mahesh welcomed his clients in his chamber.

While Dr. Mahesh was speaking, he maintained his eye contact with his client. He focused his eye on Kamala and gently shifted her gaze from his face to Chand who kept fidgeting with his fingers.

Occasionally he moved his gaze away from his client, so that Kamala and Chand did not get the uncomfortable feeling of being stared at. He faced his client squarely, leaning slightly forward to



communicate that he was interested in listening to what Kamala had to say. Dr. Mahesh also casually reached out his hand and placed it on Chand's thin arms, gently squeezing it to convey the feeling of reassurance. All the while he maintained his expression to indicate his interest and encouragement.

Gradually Kamal & Chand began to relax. They even managed to give a weak smile to Dr. Mahesh.

Kamala : I'm not feeling very well again. I feel tired and don't feel like eating.

Dr. Mahesh had already observed that Kamala looked pale and her nails seemed cyanosed. He remembered that Kamala was severely anaemic. He knew that Kamala had previously refused medical help for the treatment of anaemia and because of that, the severity of the illness had increased. He wanted his client to accept her condition and reach for help.

Dr. Mahesh : You are very active in your last pregnancy! This time however, your face does not look very fresh. You look pale and listless. You are not able to do much work. Is it?

Kamala : Yes, I don't even go to the fields any more. My husband has to do all the work, both at home and in the fields. Even though he doesn't complain, but I can see it is too much for him. I'm very worried about him. If some thing happens to him I don't know what I will do?

Dr. Mahesh : Yes, I can see that you are very worried. You too need to take (empathising) care of your own health and of the baby to be born.

Chand reached out and clasped Dr. Mahesh hand tightly and said: We are in a tight position. With Kamala's delivery the children will have no one to look after them. I wish she had listened to you about using some methods of birth control.

Dr. Mahesh gave Chand and Kamala a broad smile and assured them that he will give all the help he could. Even though Dr. Mahesh knew Kamala desperately needed medical attention for her condition, he restrained himself and with the help of verbal prompts allowed his client to express her feelings. In the course of the conversation, Chand & Kamala accepted that they needed to use contraception and Kamala had to get medical help. They requested Dr. Mahesh to guide them. Dr. Mahesh then explained to Chand that because of the severity of her illness she would require the help of specialists and nurses for which Kamala must go to the district hospital immediately.

The session concluded with Chand assuring Dr. Mahesh of his decision to go for sterilisation in once Kamala was able to get back to her normal condition.

Dr. Mahesh was a happy man and he looked out of the window of his chamber and found that the air was cool and faint smell of flowers made the atmosphere very pleasant. The session ended with mutual satisfaction.

### ***Analysis***

Like Kamala there are various types of people who seek help at the last minute. It is important for a counsellor not to become biased and give up hope, no matter how hopeless the case looks. As a counsellor you must never turn away a client by blaming her/him for seeking help at the last minute.

Another factor that should be borne in mind is that as a counsellor, you too have limitations. Be aware of them as a professional, and do not hesitate to refer your clients to specialists and experts when needed. For example Dr. Mahesh knew a part from helping Kamala to take the decision for seeking medical help, he could do nothing else. The client's advanced state of illness required immediate and specialised care, which the Medical Officer was not capable of delivering. Also, almost always schedule a return visit, so that client does not feel unwanted and neglected.

### ***Helpful Tips on Counselling***

<b>Mothers</b>	<b>Couples</b>	<b>Families of Mothers at Risk</b>	<b>Adolescents</b>	<b>Child Care</b>
Develop a rapport	Talk about different kinds of contraception, their advantages and disadvantages	To inform about the precautions that need to be taken	Inform about the biological differences in a male and female anatomy	To inform mothers about immunization, importance of proper nutritious diet, breast feeding and infant illness
Have an empathetic attitude towards them	Spacing between children	Making them aware of the risks	Informing about pre-marital and unprotected sex	Emergency care tips

Mothers	Couples	Families Mothers Risk	of at	Adolescents	Child Care
<b>GATHER</b> G – Greeting A – Ask open ended questions T – Tell benefits H – Help client make own decision E – Explain R – Return visit, follow up explained	The need to give good life to children by keeping balance between wages and children.	Informing them about the steps to be taken in case of emergency at home		The right age for marriage	Growth monitoring and identification of danger signs

Mothers	Couples	Families Mothers Risk	of at	Adolescent s	Child Care
To deal with misconceptions	Dealing with misinformation & Rumours	Identifying alternatives and options for emergency care outside home		Risk and precautions to be taken	Make available information and alternatives for treatment(home remedy and Doctor's advice)



There are some salient points, which can be used, judiciously in any counselling situation. At this point we can look at counselling as a stepping stone through which the doctor guides his client and leads towards a solution to the satisfaction of the client.

**The process of counselling goes through following steps in a sequential manner:**

- |                |   |
|----------------|---|
| • Greeting:    | With a smile and in a friendly manner   |
| • Attention:   | Concentrate fully on the client   |
| • Openness:    | Use open-ended question to set the discussion on a voluntary basis  |
| • Take Notes   | Noting can be mental since some clients may feel conscious. Basic point is that counsellor should have total concentration.                             |
| • Analysis of: | Sift the important information from the rest of the details and information conference it with the client. In case of gaps left the client fills it up. |

- |                       |  |
|-----------------------|--|
| • Examine alternative | This is a critical stage since the client has to assess the opportunities alternatives solutions. Counsellor should help this process by giving advantages and disadvantages of a possible course of action. |
| • Helping client to : | To resolve dilemma of the client, the desire for adoption of a possible choice should come from the client. If it is a voluntary decision it will be faithfully implemented                                  |
| • Developing action:  | The counsellor should help the client to think clearly on the possible course of action in order to execute the idea accepted by the client.   |
| • Planning future :   | It would be appropriate if the counsellor ensures that the client meets occasionally to develop linkages.  |

## KEY POINTS

1. Clients, especially women, find it difficult to express their emotions and their health problems.
  2. Identify these women clients through their gestures and facial expressions.
  3. Show them concern and help them overcome through their barriers comforting them, by being approachable.
- Sit where you can see the speaker and watch him/her for unspoken signals/gestures.
  - Beware of hearing only what you expect, or want to hear
  - Keep an open mind
  - Make notes
  - Don't let your mind wander
  - Speak with care
  - Give correct information

- Break your information into short sentences and easy to understand language, especially for pregnant/expectant mothers
- Give key messages
- Ask clients to repeat them for easy recall of information.
- A counsellor should be empathetic, patient, understanding, supportive, helpful and encouraging.
- Should not be patronising and impersonal.
- Must be open-minded.
- Provide all options and opportunities to help client make an informed choice.
- Should not be judgmental.
- Should follow the counselling techniques and steps.
- Should apply the verbal and non-verbal skills while counselling.
- Should keep the surroundings cheerful and peaceful and clean.
- Should not blame the client.
- Should refer complicated and high-risk cases to specialised care.
- Schedule a return visit.

## TEST QUESTIONS

- 1) While taking the history of the patient which communication skill is important.
- 2) What is ROLE and where do you use it?
- 3) Why important information should be shared with the client.
- 4) What types of questions are useful in eliciting information and why?
- 5) Where and when to use interviewing skills?
- 6) What is counselling?
- 7) What are the qualities of a counsellor?
- 8) Do you agree the Response C is the correct response? Why?
- 9) List out the at least four counselling techniques?
- 10) What are the skills that you need to apply while counselling?
- 11) Differentiate between empathy, supportive, encouraging and Impersonal Counsellor.

## **SELF ASSESSMENT**

### **EXERCISE I :**

#### **Non-Verbal Skills**

To sharpen your IPC skills you do the following exercise with a client. Adopt a body posture, which is non-communicative i.e.

- Lean away from the client
- Maintain no eye contact
- Keep on working at your watch to convey disinterest in what she is saying.
- Use ineffective Verbal Skills
- Give no feedback/take no feedback
- Give very technical information

After going through a 10 minutes session with a client, which can be related to history taking or giving instructions on medication and care at home, ask the client about how she felt and why?

This exercise will help you to understand the importance of non-verbal behaviour, which is neglected generally. You can improve these aspects of your communicative behaviour by practising it. Your anganwadi worker can also help you in practising these skills by acting as a client.

### **EXERCISE II :**

#### **Information-Sharing**

To judge your effectiveness in disseminating information in easy to understandable way is to test your skills as an information giver.

Information may be important but, if you do not have the skills of an effective speaker and presenter, it will fall on deaf ears.



Follow the guideline given in this unit and do this exercise among a group of Health Workers, Health Supervisors or Community Members for fifteen minutes without pausing or changing your tone. Get **THE REACTION OF YOUR AUDIENCE**.

^Repeat the same message but with pauses, modulating tone of your voice from time to time. Give examples from the listeners/audiences own experiences and allow them to give feedback of their understanding and doubts.

**GET THE REACTION OF YOUR AUDIENCE** and check this with the earlier response.

You will find that the second presentation is appreciated by the listeners.

- Should be able to practice the counselling techniques

### **EXERCISE III**

- Select a young couple with whom you have a good rapport. Ask them to pretend to be a couple who are resistant towards the use of any contraceptive measures. Practice on them the counselling techniques and skills you've learnt in this unit. Ask the couple to help to evaluate you on how well you've been able to utilise the techniques and skills. Make a score chart and score yourself on a scale of 0 to 10 based on the couple's observations. This will help you to improve on those particular skills and techniques in which your rating is below 5.

### **EXERCISE IV**

- Similarly you may select a young mother and counsel her on the management of ARI. Ask her to evaluate you on your performance.

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^ During the training session, the facilitator may use examples to illustrate the points.

## EXERCISE V

Rukmini is 28 years old woman using the IUCD. There other women in her village she knew use the IUCD. Two of them got pregnant and one had medical problems. Rukmini is convinced IUCD will not help her but either gives her problems or make her pregnant. She wants to get the IUCD removed.

What techniques will you use to make Rukmini a voluntary acceptor of IUCD?

Make a checklist of the counselling techniques and assess if you will be able to convince Rukmini in one or couple of visits.

## **UNIT – III**

### **PLANNING OF IEC PROGRAMME FOR RCH AT THE PHC**

#### **LEARNING OBJECTIVES**

By end of this unit, the medical officer, (In-Charge of PHC) will be able to:

- Appreciate the need for planning and management process of IEC under RCH Programme at PHC area ;
- Assess and analyse IEC needs in his/her PHC area ;
- Analyse and segment audience at his/her PHC area ;
- Identify communication resources at his/her PHC area ;
- Develop and select appropriate strategy for IEC activities in his/her PHC area ;
- Develop appropriate message design for IEC ;
- Develop management plan for implementation of IEC strategy at PHC area ;
- Develop Media and Material Production Plan ;
- Develop Monitoring and Evaluation Plan.

#### **CONTENTS**

- Importance of planning for IEC activities.
- Health Problem and situation (implementing organisation, local media resources and audience including target group selection) analysis.
- Developing IEC objectives.
- Message design.

- Identifying major activities and management plan.
- Media and material production plan.
- Monitoring and evaluation plan.

## INTRODUCTION

Over the years, you as a Medical Officer (Incharge of a PHC) have been implementing several IEC programme. Most of these plans and programmes are sponsored by your respective state government and those are prepared at state government level. Though in some the states yearly district level IEC plans are prepared but it is observed that most often these do not address to the specific IEC needs of different PHC area or of sub-centres. So the IEC planning and implementation skill mainly remains to be centralised.

With this phenomenon in view, under RCH programmes entire health care planning process including IEC activities are emphasized to be made decentralised. Special efforts at presently undertaken for strengthening district level IEC planning. District IEC plans can be effective provided the PHCs under it can develop IEC plans of its own reflecting varied IEC needs of specific villages under different sub-centres. Such IEC plans and their effective management requires appropriate skill development. As a leader of the PHC team you should have to acquire adequate knowledge and skills to guide his/her team members in this respect.

As an incharge of PHC you should know how planning is important in your day to day routine activities. The plan provides answer to basic questions such as why, what, how, who, which, where in relation to the problem. This helps mainly for organising in best possible way the subsequent operation and to set the whole action in motion and where ever needed, bring in change in the schedule of activities. It ensures that progress is made towards achieving targets, monitoring all activities and resources are optimally utilised. It is a management tool for co-ordinating activities of the staff and resources while implementing the plan or a



product. While preparing detailed plan for action, the existing programmes and services should be examined and same would be modified to meet the requirements. These modifications could be in terms of staff function, activities and scale of operations or organisational revision to increase coverage and efficiency.

## **STEPS TO BEHAVIOUR CHANGE**

Under RCH Programme the ultimate goal of communication (IEC) activities at all administrative levels is not limited only in awareness generation. It is extended up to change of behaviour of specific target group of clients and also of the health care providers. As a leader of a PHC you also are to focus on this aspect. So, it is necessary for you to clearly know the various steps involved in behaviour change. These steps are as follows :

### **Knowledge :**

- Your audience can recall specific messages
- She/he can understand what messages mean
- She/he can name products, methods, or other practices and/or sources of service supplies.

### **Attitudes (approval) :**

- Your audience responds favourably to messages.
- She/he discusses messages or issues with members of personal network (family, friends).
- Community approve of practice.

### **Intention :**

- Your client recognises that specified health practices can meet a personal need.
- She/he intends to consult a health provider.
- She/he intends to practice at some time.

### Practice :

- Your client goes to a provider of information/supplies/services.
- She/he chooses a method or practice and begins use.
- She/he continues use.

### Advocacy :

Your client acknowledges the benefit of practice.

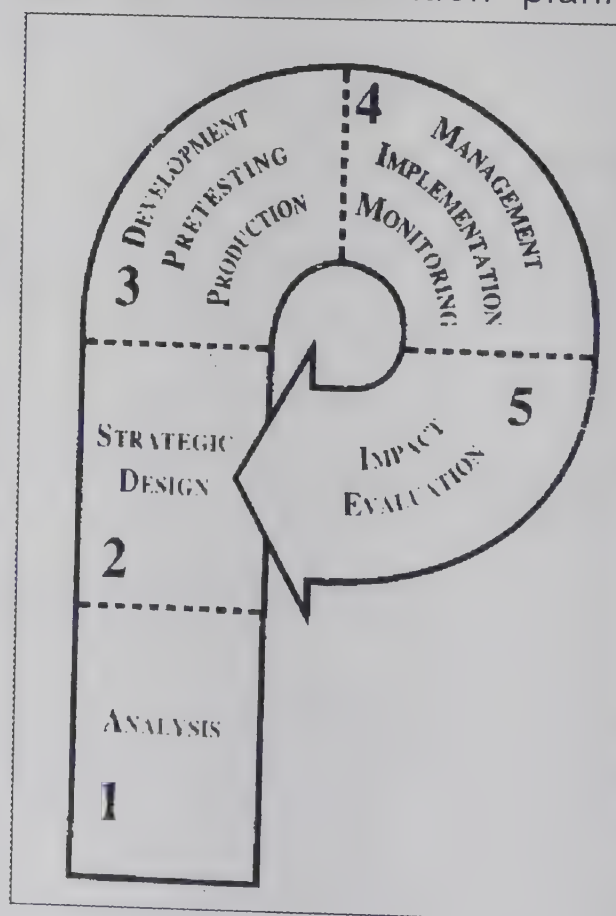
She/he advocates the practice to others.

She/he supports programme in the community.

## GUIDELINES FOR PLANNING

Communication planning should be strategic with a vision. It is based on a clearly defined strategy and designed to achieve specific goals established in advance. For example : all parents (eligible couple) will get their infants and children below five years immunised in proper time and with full doses in your PHC area. With this vision and goal in view the communication planning process will begin.

Communication planning should flow the widely known P process. The P Process is a framework that describe step by step development of a strategic health communication programme. It is a road map to guide you from the first rough notion that you might want to promote. The diagram given below shows the P Process.



## STEP 1 : ANALYSIS

Analysis is the first step to effective communication, just as it is the first step in any effective action. As the incharge of your PHC you along with your colleague there, are required to analyse the major health problems in your area. For this you are to review existing health and demographic data, survey results, study finding (if any) and other available data to be sure you understand what the basic health, social, and economic problems are for the people of the area, and how much of these health problems are related to the issue of communication. Not all problems can e solved only through communication efforts. Along with this you are to **analyse and review the results of existing health and to her related programme and policies operating in the area.** Identify the strengths and weaknesses of those policies and programmes; and the service delivery system. Then you have to **analyse potential audience** of your different communication efforts. For this you have to look for the geographic, demographic, economic and social factors that shape people's behaviour. These include differences in knowledge, attitudes, practices and advocacy; in age, sex, literacy, income, fertility, life-style, values and in other individual and community variables and mass media exposure. Besides, the audience should be segmented with their distinct identity so that they are most likely to respond to different appeals. All such kinds of information may be collected both from your village level health provides, other important village and caste group representatives. You are also to **identify and analyse public or private organisation** in your area — that have competence, commitment, coverage etc., to carry out a communication programme. Besides, there will be **need for assessing availability, reach, and cost of broadcast, print, clinic based media and community activities.** Identify the communication habits and media access of primary and secondary audiences.

ALSO PLEASE SEE UNIT IV.



## STEP 2 : STRATIGIC DESIGN

In the second step you are to develop your communication objectives taking into considerations the findings you have made in the first step. Communicaton objective should be SMART. These words stand for :

- S —** **Specific** (what kind change in which specific audience group you like to make.)
- M —** **Measurable** (level of behaviour change of target audience either in quantitative (percentage) or in qualitative terms.)
- A —** **Appropriate** (communication programme must show the intended audiences a clear benefit from the services, supplies, products, or other health practices. By knowing and listening to your audience you can position the programme to help meet an important unmet need of the intended audience segments.)
- R —** **Realistic** (Communication programme must be properly implementable within your resources given or mobilised from different sources.)
- T —** **Timebound** (communication programme must indicate during what period particular activities to be completed and intended behaviour change will occur.)

To make your communication objectives SMART you are required to carefully follow the **behaviour change model** explained earlier. State explicitly the assumptions about people's behaviour underlying your basic strategy and positioning. Explain why, how, and in what order you expect people to make the desired changes in their health knowledge, attitudes, intentions, practice and advocacy.



Then you select a **lead media and supporting media**. Include community mobilization and interpersonal communication among family friends, community, social networks, and service providers. Plan a co-ordinated multi-media approach for a synergistic impact.

After the strategic dimensions of the communication programme is prepared you are spell out management responsibilities i.e. **implementation plan**. Prepare a line item budget. Develop a work schedule (who, when, what for responsible) along with regular benchmarks to monitor progress and with regular reports. Also, plan to measure the expected changes (**evaluation**) in your audience using multiple data sources. Plan evaluation and collect baseline data before implementation begins.

### **STEP 3 : MESSAGE & MATERIALS DEVELOPMENT, PRETESTING AND PRODUCTION**

For maximum impact, make your messages clear and simple. Avoid complexity. Focus on benefits and practical solutions that meet people's needs. Use strong visual images. All these must keep to track to local language/dialects, values and customs. There seven basic principles for developing appropriate messages. These are often called as 'Seven Cs'. These are :

The messages should :

1. **Command Attention** of the local people.
2. It must **cater** not only to their heads, but also to their heart.
3. **Clarify** the message with what, when, how to use and where to be available.
4. **Communicate** a benefit for the desired and changed practices.
5. **Create** trust (credibility of source and local success stories).
6. **Convey** a consistent message.
7. **Call** for action (motivation to use).

Message development being technical in nature you can take help of local talents (experts) and also your own grassroots health workers.

After preliminary drafts of the messages are prepared you are required to **pretest and retest** concepts with local groups and individuals representatives of the intended audiences to find out what works for them. Encourage audience participation. Give special attention to pictures or other non-verbal materials that might be easily understood. On the basis of findings and recommendations in pre-testing you are to make necessary revisions in your message content. Revise any materials that are not well remembered, understood, and relevant or are controversial or offensive to the intended audience.

These revised materials then can be produced in large volumes, since this is cost effective, and promptly so that products are available as soon as needed.

ALSO PLEASE SEE **UNIT V.**

#### **STEP 4 : MANAGEMENT, IMPLEMENTATION AND MONITORING**

Good management follows the strategy and implementation plan. You, as in-charge of the PHC are to assign clear responsibilities to PHC level, Sub-centre level and village level other co-operating agencies and health workers. It is you, who sets up coordinating mechanisms. Implementation of communication strategy emphasizes maximum participation, flexibility and on the job training of your staff and persons involved in it. As per the planned activities you are to develop a monitoring and reporting system which tracks and also supply feedback information to you. As per the feedback information you require to review and modify the implementation plan. You have to be result oriented and for that you are required to plan for training of your colleagues and others, emphasize both individual communication skills and

institutional capacity in order to build a critical mass of communication experts. Besides, create an organisational climate of cooperation and mutual help. Besides, keep your reporting officers at district level informed and encourage them to welcome feedback and rapid responses.

In short your communication management improvement process will involve the followings :

### **EMPOWER PEOPLE**

- Offer effective leadership.
- Train and retrain staff.
- Provide job aids and tools.

### **IMPROVE ORGANISATIONAL CLIMATE**

- Set clear vision and plans.
- Strengthen staff commitment.
- Build capacity through structural and system improvement.

### **SIMPLIFY TASK :**

- Keep focus on clear objectives.
- Stop doing what does not need to be done.
- Focus on creating value.

ALSO PLEASE SEE <b>UNIT VI.</b>
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### **KEY POINTS**

1. Five steps in behaviour change.
2. P Process in Communication strategic planning.
3. Analysis includes understanding problem, knowing audience, reviewing of existing programmes and policies, identifying



- leading and support organizations and assessing their communication capacities.
4. Strategic design involves development of SMART objectives, following behaviour change model, selecting media and activities, drawing up of an implementation plan with budget, planning for monitoring and evaluation.
  5. Principle of seven Cs in message development, pre-testing and production of materials.
  6. Three steps in management improvement process.

### **TEST QUESTION**

1. List out steps in behaviour change.
2. List our steps in planning and the sub-steps involved in each of them.
3. How shall you go for communication problem analysis in your PHC area for developing strategic planning ?
4. How shall you design a strategy of communication for your PHC ?
5. How shall you develop message and materials ?
6. What shall you do for improving management process in your PHC area ?

### **EXERCISE**

Making an Action Plan. Distribute copies of Handout given below. Explain what an Action Plan is. How to make it and how to use it? Write a sample Action Plan on the chalkboard. Assign each group a different RCH programme. Tell the group to follow the instructions on the worksheet and write out their action plans. Medical officers know these programmes, so they should not have difficulty in making an action plan. Allow groups for 30 minutes for this part of the exercise.



Action Required	Date		
	Begin	End	Remarks



## **UNIT - IV**

### **SOCIAL MOBILISATION**

#### ***LEARNING OBJECTIVES***

After reading this unit you should be able to:

- Describe the importance of building effective community partnerships in your block area.
- Demonstrate skills for applying appropriate Participatory for Learning Action methods for conducting community needs assessment
- Demonstrate the ability to use low cost communication/media materials from available resources for community mobilisation.

#### ***CONTENT***

- Mobilising and motivating the Community
- PLA Methods to involve community in partnership programmes.
- Use of communication materials

#### ***INTRODUCTION***

This unit explains the importance of mobilising the community and the procedure for identifying the key social groups and institutions for developing partnerships. To bring about the change in the behaviour and attitude of the people it is important to:

- Convince the community members about their role in the efficient running of the health system.
- Involve them in a partnership for different health and health related programmes at the community level.

To supplement these efforts, the medial officer can use communication material to create interest and information on health among the different community groups.

### **What is mobilisation?**

‘Mobilisation’ essentially means gathering a force of people or opinions on certain issues/issue for collective action.

At the community level various available resources and their utilisation depends on collective will and action. This will and action should be directed towards positive outcome for majority of the people. In order to bring about this objective, mobilisation process is undertaken.

### ***Why Social Mobilisation for Health.***

In the context of health, mobilisation means collective action of people for achieving the goal of health for all.

As a Medical Officer you must have experienced that all health programmes require people’s attention, support and participation. Those health programmes which have become a success have largely made it because of people’s active participation in them. Pulse Polio programme is one such programme which has received community support and participation. School children, teacher, religious leaders, Panchayat and other groups in the community have successfully formed linkages with the Health Team in mobilising the community for the Pulse Polio Programme.

For people to become active partners in a health programme and change old-orthodox life styles, it is important for them to do two things which are fundamental:



- Understand the need for change.
- Acknowledge the course of action for change.

A Medical Officer can help them to discover the possibility of a healthy life. You have a position of respect in the community and you are the leader of your Health Team. To ensure that your block area is able to achieve the goals of RCH, following steps need to be taken:

- 1) **Involvement and active participation of key groups of the community in the health programmes.**
- 2) **Sustain ability of these efforts through individual, group and community participation.**

### ***How to Mobilise***

A Medical Officer must know the community of his block area before he can invite them for any participatory activity. It is not enough to know few people and have a general idea of the village in your area. Just as when you prescribe treatment for a patient, you first take the history of the patient and his illness. You conduct physical examination, get more diagnostic tests done to arrive at a proper diagnosis. On same lines, for any community to become an active partner in the health efforts, you have to assess its strengths and weakness.

As part of an effort to mobilise all communities, especially marginal groups such as backward classes, women and adolescent, you will have to involve these groups in a meaningful participation. The essence of RCH programme is to bring community perception, needs and choice of action in the centre of any partnership effort. You have to be guided by this ideology to ensure that views and needs of every section of the community are reflected in the health programme at the local level.

### ***How do You Begin***

- Step I      A meeting of the Health Staff of your block area should be conducted specially to identify different social groups and social institutions in their specific area. In this effort Block Extension Educator, MPHW, LHV and Health Workers can assist you in preparing this list.
- Step II      Specify different groups on the basis of important castes, tribal groups, religion, land holding and employment. This detailed and analytical report will give you more correct and scientific data about the area and its people.
- Step III      These details will help you to understand the social and economic dynamics of your block area and implement your RCH programme in a more systematic way. The next step is to follow the following procedure:
- |            |   |   |
|------------|---|---|
| Assess     | - | the needs of the different groups.  |
| Prioritise | - | these needs in terms of resources and time.   |
| Action     | - | Define the activities to be undertaken to overcome/tackle an issue.   |
| Assign     | - | Delegate responsibility among different key members of the group to undertake health action at community level. |

### ***Meetings***

- Frequent meetings with the staff will help in gathering information on the problems a particular community or a group is facing. The CNA report should be used as a resource for updating your knowledge on important health issues.
- Meeting with key representatives of the community groups from time to time will enable you to tailor-make health services according to the local health needs. You can prepare an annual calendar giving the day of the week/fortnight/month on which such meeting, their venue, the topic and the time can be indicated. Your

staff can contact the identified persons for these meetings and brief them also.

## ***METHODS TO INVOLVE COMMUNITY PARTNERSHIPS***

### **Participatory Learning for Action**

For an effective assessment of needs it is important to interact with a large number of people, as this is the only way to collect valuable information in a short time. Participatory learning for Action or PLA methods of interaction with the Community can be used to uncover and understand Community's Health needs and the social and cultural values, which effect them. The PLA methods have been tried successfully in a wide range of developmental programmes, including the health sector. The basis for conduction PLA instead of the routine meetings is the need to give people more opportunity to present their knowledge and views, which will ensure that Health Programmes are responsive to local needs.

We will now discuss some of the PLA methods for assessing the community's needs -

### **Chapatti diagrams**

The Chapatti diagram uses chapatti or roti as a material to analyse complex issues. It becomes easier for illiterate and lay persons to relate their everyday experiences with the help of the material like chapatti.

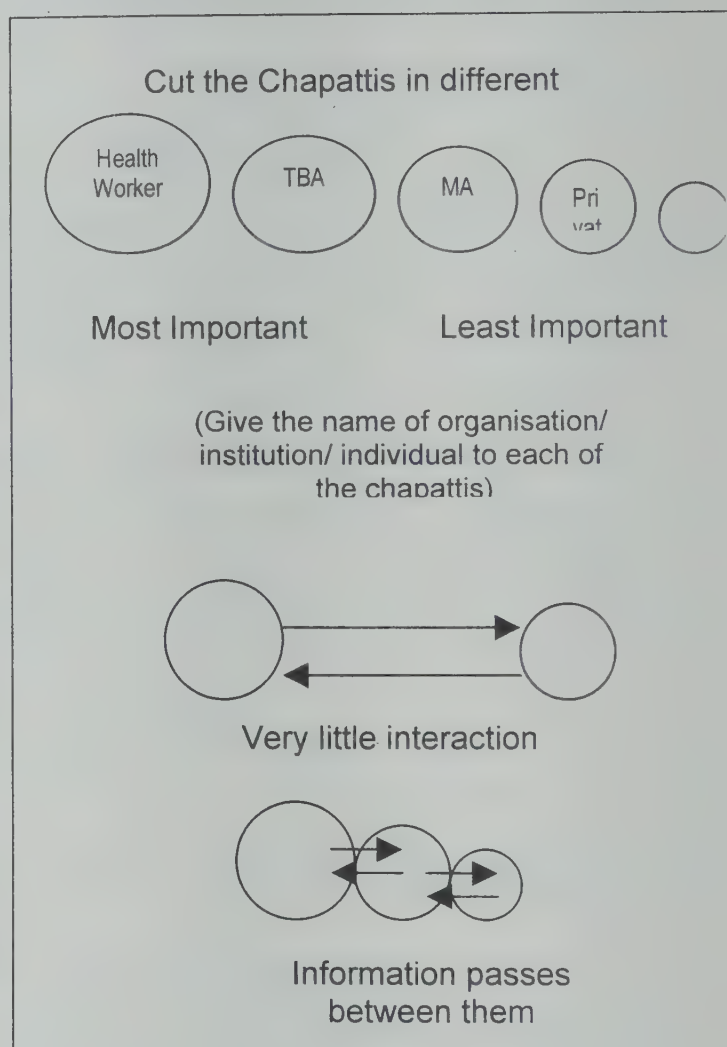
This method helps in understanding and analysing relationships of various institutions, organisations, programmes or individuals with each other and with the village as perceived by the villagers. With the help of this exercise the MO will be able to bridge the gap of information and establish mutual understanding for what actions are needs to improve and make health service delivery effective.



In this exercise a chapatti or a paper is cut in different sizes of circles to indicate relative importance of a particular institution/individual to that particular area/village.

\* The basic steps for preparing chapatti diagram are:

- 1. Arrange a gathering of important groups like, Panchayat members/ Yuvak Dal/ Mahila Mandal, and ask the members to list individuals or institutions that are important for them in terms of health such as the Health Worker TBA, PHC Medical Officer, Private Practitioner, etc. and what roles they perform.
- 2. Ask them to place the chapatti or paper cuttings in different sizes proportional to the importance of these individuals or institutions. The largest circle should be placed for the most important and the smallest for the least important
- 3. The arrangement of the circles should be according to the interaction. The circles placed far away from each other will indicate no contact. If the circles just touch each other, it means that information passes between them





## ***How to conduct 'Chapatti Diagram' Exercise***

### **Ask questions such as: -**

- Why are they so far apart?
- Why are these people/institutions so important?
- Why are they close to each other?
- How can they become effective and efficient?
- What hurdles are there in their performance?
- Who can remove them and How?

- This information may then be used to determine on how important partnerships can be established or enhanced. As a Medical Officer you can use this session to understand the existing relationships and use them effectively for the outreach of the services Health delivery.

### **Relative ranking**

With this method your health team can determine the priorities and preferences of the people. This is a useful method if the people have a long list of felt needs and you need to select the most important need. Apart from this, the method will also give you reasons for their choices.

#### **The basic steps involved in this method:**

- Arrange a gathering of important village leaders. These meetings can be arranged with specific group like Panchayat members/Anganwadi workers/Yuvak dals/TBAs. Ask them to list various health services available and their ranking in terms of quality and need. They may also add services not available to them but are important for them.
- Write one health service on one card or paper. Therefore you will have as many cards or papers as there are health services available as well as required by the community. As mentioned above some

of the services they state may not be directly related to health, but are nonetheless important to them. You may also write them down.

- Place any one card on the floor. Pick up another card and ask the group if the service listed on the second card is more or less important than the service listed on the card on the floor. According to the importance place the card above or below the card on the floor.
- Continue placing all the cards in this manner. This will help the community to make decisions on priority basis for the health services.

- |  |
|--|
| * Discuss the ranking with the participants.                                   |
| * You could ask questions such as "Why is this service more important to you?" |
| * How can we improve the services?" etc.                                       |

## **Village Walk**

There is another method a "Village Walk" exercise which you can undertake with your staff along with community group representatives living in the area to determine or locate areas in a village which need specific health attention and action. This can be done by your health team if there has been any epidemic or seasonal outbreak of a disease. It is important to do this walk with the villagers because it will help you to obtain the general knowledge of the area and later enhance the planning and monitoring of the services.

Your team will be able to observe the drainage and sanitation, utilisation of backyard space, location of drinking water taps, etc. Also during the walk you can use some marker to identify houses with beneficiaries such as pregnant women, children below one year of age, eligible couples, sick children, etc. Starting from one important entry point of the village, the walk route is recorded on a paper and important areas are marked. The families/clusters are identified

which may need DDT spray or chlorine in water tanks used by some houses.

This method can be used especially in those villages where health problems are endemic.

### ***Special occasions/ FAIRS/HATTS***

Other than these methods to do need assessments, you can depute your staff to use important events like festivals, special fairs or local marketing day to promote and draw people's attention to important health-related issues and information. A stall where a display is made of important information for prevention of diseases can create interest among a larger group than is possible for you to mobilise in any other situation.

All this activity requires an effort to be creative and curious. Organising your work differently and efficiently in the PHC area demands that your health staff are oriented to use creatively and with minimum cost such material which can be used at the PHC at important junctions like railway and traffic crossings. In the remaining part of this unit, we would like to discuss with you the need and the usefulness of these materials in your work place.

### ***COMMUNICATION MATERIALS***

You may have heard old Chinese saying, "If I hear, I forget, If I see I remember, If I do, I know". This suggests that learning alone is not enough for providing learning opportunities. People learn and understand more if they see things. It is therefore essential to supplement your IPC and mobilisation efforts with communication materials. For instance when you call a meeting of a particular group to give information or conduct IPC regarding the availability of RCH services, along with talking. If you and your team use posters, slip book, pictures, etc. the presentation will be much more effective and easily understood. The health programmes become visible if communication material is displayed properly at all important places.



Equally important is to establish partnerships with other development agencies working in your area.

- \* Your association with voluntary groups like Rotary or Lion clubs can lend support to publicity and promotional activities.
- \* The inter-sectoral co-ordination, especially with education department has proved effective in the past. It can be used effectively with railway and Banking establishments as well which can support your health promotion campaigns. The folk media groups available in your block area need to get encouragement to take up promotion of health programmes. The Panchayat and Yuvak Dal can help in co-ordinating and organising such events on a regular basis.

Preparation and organisation of communication/publicity material can be undertaken through various initiatives by the Medical Officer:

### **Uses of Communication Materials**

- To organise teaching programmes more effectively
- To avoid too much talk/explanation
- To hold interest/attention
- To impress the idea more effectively
- To stimulate and motivate action and thinking
- To change attitudes
- To overcome language barriers

You can give Guidelines to your staff in selecting communication materials



1. Consider the audience  
While choosing a particular communication material, it is important to consider the size of the audience. For instance if a picture in the size of a post card is used for an audience of 20 to 30 people, then the significance of the picture will fail to register in the minds of the people.
2. Easy to see  
To be effective, visual aids must be easily seen by the participants. You must also place them in such a way that they are visible to each member of the audience without obstruction. Most of the wall writing done in villages must be visible and properly written. These need repainting after monsoon.
3. Easy to Understand  
Make sure the words and the language used in the material are simple and easy to understand.
4. Simple and direct  
The idea used in the material must be simple, clear and direct. You may use colours to highlight important points or sentences, especially in the wall writing or the Banners.
5. Easy to handle and transport  
It would be difficult for you to carry big bulky communication aids. It should be light in weight as far as possible. The size need not be larger than is necessary to fulfil their function.
6. Easy to access  
Make communication materials from things, which are handy and easily available to you. For instance instruct your staff to make posters by using cuttings from magazines, newspapers, locally available books, etc. You could use radio/audio programmes that are broadcasted at a particular time everyday by forming listening groups among Mahila Mandals, Yuvak Dals or even members of the Panchayat.

7. Attractive and clean  
To be effective, use materials that are colourful, neat, clean and in good working condition.
8. Inexpensive  
It will be useless to think of using expensive materials, because trying to get a sanction to purchase or create these materials may turn out to be a time consuming process.

**Here is a list of some of the communication materials Aids that you could consider using**

- **Pictures**
- **Posters**
- **Sketches**
- **Chalk/black board**
- **Flip charts**
- **Flash cards**
- **Charts**
- **Banners**
- **Magazine and newspaper cuttings**
- **Chapatti**
- **Toys**
- **Radio/ audio programmes**

## **CONCLUSION**

Building effective partnerships with community is an essential part of the strategy of Reproductive and Child Health programme. To bring about change in the behaviour and attitude it is imperative to involve the community and its people in the process. With the help of this kind of partnership we can hope to fulfil the goal of the RCH programme.

## **KEY POINTS**

- Identify groups, community members and individual for mobilising the community
- Involve the Community members to conduct assessment exercises.
- Use various PLA methods to involve the community in building partnerships
- Use of communication materials
- Guidelines to select communication materials

## **TEST QUESTIONS**

- Why social mobilisation is important?
- What is the process of mobilisation?
- What is PLA?
- Name any one method for assessing community's need and explain the steps in this method.
- What are the various uses of communication materials?
- List out the guidelines to select communication materials

## **SELF ASSESSMENT**

### **EXERCISE I**

- Organise a 'Relative Ranking' exercise with the help of a group of village elders

### **EXERCISE II**

- Organise a "Village Walk" with a group of Yuvak Dal.





## **UNIT - V**

# **MANAGEMENT AND CO-ORDINATION OF IEC ACTIVITIES**

### **LEARNING OBJECTIVES**

After going through this unit the Medical Offices should be able to:

- Estimate cost for the IEC activities.
- Manage the procurement and distribution of materials and organise activities for IEC.
- Know with who all to Co-ordinate for IEC activities under RCH.
- Provide assistance to train personnel for IEC activities.

### **CONTENT**

- Management of IEC materials and activities.
- Guideline for procurement and distribution of IEC materials.
- Co-ordination for IEC activities.
- Training of personnel.

### **INTRODUCTION**

As the medical officer of a PHC your technical expertise and managerial skills are equally important to you in the discharge of your duties as the head of the office. But apart from the proficiency in these two fields, a M.O should also be a good communicator. In order

to co-ordinate effectively you require to communicate with different levels of people and seek their assistance and support in fulfilling your responsibilities to the best of your ability.

### **Management of IEC materials and activities**

In the management system of the state, the procurement of IEC materials, for the district, is the responsibility of the District Extension Media Officer or the DEMO and organising IEC activities for the block, is that of the Block Extension Education or the BEE. But as the head of the primary health centre, it is your responsibility to estimate for both the material and the activity for your area and plan for their procurement and balanced distribution.

To provide a near accurate estimate you will first require to **forecast the need** of your area. Subsequent to that would be to **plan a schedule** of activities, followed by a balanced **distribution** of material and events. All this is very necessary to estimate for IEC activity.

### **How to Estimate**

Suppose, there is a village or a community in your area which has not shown any significant reduction in the birth rate, even after repeated meetings and counselling sessions were conducted by your health team. You realise that the efforts made by your team may not be enough, so you need to do something that will make the whole community sit up and take notice of your efforts.

The acceptance and continued use of contraceptives are influenced by several factors, such as, the method of contraception, including its advantages and disadvantages. Individual and social acceptability, provider's knowledge, skill and attitude, effective communication, motivation and counselling, etc.

Experience in family planning communication shows that a multimedia approach is most appropriate to flood the community. No one medium or channel is sufficient to influence the behaviour.

A combination of appropriate communication methods and activities produces correct synergy, achieving more than each medium alone.

Hence to bring about a significant change in this particular component of RCH you need to execute a well planned communication campaign. To do that you will need adequate resources financial as well as material wise. For this purpose, first thing you will need to do is to clearly forecast the needs of the community. Once that is done then identify the IEC materials and activities that can be used or is easily accessible to the community. For example if you identify film shows 4 or 5 times a month and there is no cinema hall in or around the area, then it may not prove beneficial for the campaign.

Following is a list of some of the IEC materials and activities that can be used to run a campaign:

- Print materials (including posters, hoarding, pamphlets, flashcards, advertisements in newspapers or magazines, bus boards, hand bills, newspaper inserts, wall calendars, etc.)
- Group meetings.
- Exhibitions.
- Plays or dramas.
- Counselling sessions by representatives from voluntary organisations, related department, etc.
- Radio broadcasts.
- Video on wheels.
- Broadcast through public address system.
- Film shows.
- Cultural programmes by local folk performers.

After the need has been clearly identified, a plan indicating the schedule of activities and a balanced and judicious distribution of material must be drawn. This should be thought out very carefully, because the timing of the campaign (when it is introduced, what else is happening during its operation, etc.) helps to determine campaign effectiveness. Based on this information an **estimate** for the campaign requirement as well as activities and events can be made.



For easy understandability and rapid action you may even draw up separate estimates, as long as they indicate IEC activities under RCH.

You will also need to plan and estimate for follow up activities of the campaign you will be conducting. A campaign without proper follow up activities will not achieve its goal.

While doing all this exercise, you will be assisted by the BEE. After planning and estimating for budget, the BEE will then develop an activity chart and start organising events accordingly. Your focus of activity should now shift to interacting and networking with individuals and organisations to provide support for the events. To do this you must already have identified and drawn up a list of organisations, institutions or individuals who and which are capable of providing you with material support and expertise in this field.

### **Guidelines for Procurement and Distribution of materials.**

Based on the activity chart an inventory for procurement as well as distribution has to be made. To conduct any kind of IEC activity, materials such as posters, pamphlets, charts, flash cards, video cassette, VCR, film strips, film projector, etc., depending on the activity, may be required. Therefore an indent has to be submitted to the DEMO with a list of materials required and with a distribution chart.

Following are some of the points that must be taken into consideration before the indenting process:

- Indenting should be timely, allowing appropriate time lag so that the DEMO has time to arrange for the materials and send it.
- Proper arrangement of the store where once the materials are received can be kept.
- Arrangement for the maintenance of equipment and their proper safe keeping should be made.
- Training of staff in the use and handling of the materials and equipment must be done.



- Manpower should be deputed for regular distribution of materials to the proper destinations.
- Record register should be maintained that will clearly show the material and equipment movement in your area.

## **Co-ordination**

Co-ordination is part of the implementation process, which in turn is an important part of management. It is said that managers spend too much time planning and re-planning and therefore never get around to actually executing their plans.

To be an effective co-ordinator, the medical officer must know all the organisations and individuals involved in either delivering health services in his area or providing support to the delivery of such services. It is his responsibility to co-ordinate their efforts so as to avoid gaps in service delivery, duplication and waste.

In many activities that are designed to target the masses, large collaborative efforts are required by various agencies and very often there is no single person in charge of the overall process. Although a certain amount of sharing of power is essential in the collaborative effort, some person must have the vision to guide, as well as, leadership abilities and authority to keep the activity on track.

**For IEC activities co-ordination is a key factor for effective implementation.**

At the primary health centre you are already co-ordinating any situations, such as, staff performing different jobs in the OPD clinic for the common goal of delivering health care to those who come to the clinic seeking them.

Similarly as the in-charge of the PHC you will be required to co-ordinate all IEC activities along with the Block Extension Educator (BEE) in your area.

As such the BEE is responsible for providing support to all health and family welfare related programmes which will also include RCH programmes at the block level. However to implement large scale activities, additional personnel may be needed. This will involve recruitment or organising staff members from other departments. Larger tasks may require sub contractors, task forces or even reallocation of workload to the team members. But it should also be borne in mind that special and demanding IEC programmes will rarely succeed if new duties are simply loaded on to already over worked staff.

Distribution agencies or even commercial agencies may be needed in some cases. All this requires co-ordination and efficient planning.

As the administrator of the PHC, you will be required to help the BEE develop a work plan for IEC activities in your area. Provide him/her with all the administrative support such as, manpower, co-ordination, transportation, organising communication programmes like exhibitions, lectures, dramas, film shows, as well as publicity programmes such as street plays at local fairs and or at the market place during the market days. The BEE will also require your help and advice while displaying IEC materials in relation to the out reach and effect, the size of the display and the target audience.

Apart from this you will need to co-ordinate with:

- Government departments,
- Voluntary organisations,
- Private organisations,
- Private practitioners.
- Locally active group.

These organisations and individuals are critical in providing contribution to the promotion and implementation of health programmes in your area. No sector involved in socio-economic development can function properly in isolation. Activities in one impinge on the goals of another; hence the need for constant

consultation between major social and economic sectors ensures the development and promotion of primary health care to a great extent.

At the community level, efforts can be made to co-ordinate with the community members in creating awareness of the services available and involve them in providing motivation to the community for participating in RCH activities. Whatever the event community activities require local support to succeed. Health Communication Programme depend heavily on grass root leadership.

## **TRAINING**

Communication is gradually being recognized as a discipline with a specific body of knowledge and skills. People who carry out large-scale communication programmes require training in the field. Working on national programmes, communication experts need to speak the same language, comprehend the strategic nature of the communication programme and apply required skills for the process. Therefore continuous training in skills and knowledge upgradation is essential for the personnel involved in communication activities.

As such the responsibility of organising orientation training programmes for health and family welfare workers, opinion leaders, local medical practitioners, school teachers, dais and others involved in this work, lies with the BEE. But as the administrative head of the PHC, it would be useful for you to be aware of the training resources available under you. The purpose of this would be, in the event a workshop or a training programme that needs to be conducted, in your area, at a short notice, you would be well prepared for it without disrupting your routine activities.

Following is a checklist for planning an IEC training programme:

- 1) Identify training needs of the PHC level health personnel.
- 2) Decide on the appropriate type of training
  - Class room instruction.



- On-the job training.
  - Others
- 3) Identify resources needed to carry out training
    - Staff including trainers.
    - Facilities
    - Equipment's and supplies.
    - Training materials
  - 4) Decide location of training
    - At sub-centre.
    - Other.
    - In community
  - 5) Set dates and duration of the training

### **KEY POINTS**

- The efficient management of IEC material and activities are based on three factors:- forecasting needs, planning and estimating the fund requirement.
- To effectively implement IEC activities at the PHC level, co-ordination with BEE is necessary.
- Resource planning for IEC training programmes and workshops at the PHC level.

### **TEST QUESTIONS**

1. What are the steps required for management of IEC materials and activities?
2. What are some of the materials and activities that can be included in a campaign.
3. List out the necessary points to be borne in mind before indenting?
4. Which are the organisations the medical officer may need to co-ordinate with, for IEC activities.
5. What are the items required to plan an IEC training programme.



## CASE STUDY

Ramgarh, a village on Bihar-Orissa border has a population of 20,000 people. It is 18 km from the nearest PHC. It was observed that one of the prime reasons for the high rate of infant mortality was diarrhoea. The socio-economic profile of the community indicates that most of the women earn the livelihood, while the men do nothing but drink, gossip and create nuisance. One of the reasons for diarrhoea among the infants of the area is artificial feeding. The literacy level of the people is less than 10%.

- 1) What are the IEC activities that can be planned for the area?
- 2) What will the estimated cost be?
- 3) How will the medical officer co-ordinate these activities?



## **UNIT – VI**

### **MONITORING AND EVALUATION**

*After going through this unit, the Medical Officer should be able to:*

#### **LEARNING OBJECTIVES**

- Understand the importance and difference between monitoring and evaluation.
- Appreciating the need to conduct KAP for monitoring and evaluation.
- Recognise the use of developing indicators for measuring programme impact.
- Know the importance and methods of conducting supervision.
- Appreciate and encourage feedback for effective follow-ups.

#### **CONTENT**

- Difference between monitoring and evaluation.
- Knowledge Attitude Practice.
- Developing indicators.
- Supervision of the functionaries.
- Feedback and follow-ups.

#### **INTRODUCTION**

Monitoring and Evaluation are two important functions of management, as well as communication. They infact, constitute an integral part of the process. The RCH programme aims to improve

the health status of the population, as well as to bring about a significant change in the existing behaviour and attitude of the people. Improved health status and change in attitude towards adopting beneficial family welfare practices is the ultimate goal of the IEC activities under RCH.

### **Why monitoring and evaluation**

It is possible that you have often wondered on the use and the need to monitor and evaluate IEC activities. It is necessary to monitor and evaluate the IEC activities because, first, it provides a platform for improving the services and secondly, helps to correct any drawbacks in the programme and its activities. One of the most common misconceptions about evaluation is that it is an exercise to be conducted after an activity or a programme is completed to assess the programme's impact. But one of the first principles of evaluation is to plan evaluation at the very beginning of the activity or it is too late to be informative or useful.

Planning for evaluation is therefore an integral part of strategic design. Also an important aspect during the strategic design phase is to plan adequate funds for monitoring and evaluation.

### **Difference between monitoring and evaluation**

Monitoring is a process, which is done frequently during the implementation of the plan. It may be done by direct observation, discussions reviewing statistics and reports. It is confined to over seeing an on-going operation. The process consists of collecting and analysing information of actual operations so that any deviations can be detected and rectified. The basic purpose of monitoring is to permit rapid changes, if they are needed to make the programme more effective.

Evaluation is the cumulative result of monitoring over a period of time. Evaluation is an assessment of the quality and quantity of work turned out by an individual or an organisation.



There are two types of evaluation:

- Formative Evaluation
- Summative Evaluation

Formative evaluation details with making an assessment of the existing norms of an area or individual. The knowledge helps to redesign or re-organise an activity to suit the needs. While Summative evaluation is important for advancing our knowledge of what worked and what didn't work in an activity or campaign. Such evaluation is useful in determining whether particular approach was beneficial enough to be used again.

The purpose of evaluation is to **measure the process and the impact** of a programme or activity against the objectives established in the strategic design in order to provide input to **decision making**.

**Measurement** requires methods for collecting information and determine the changes specified in the objectives.

**Process** refers to what happens or takes place as the programme is implemented.

**Impact** implies to programme outcome.

**Decision-making** means apply or using findings of an evaluation to improve upon the programme or activity.

The difference between monitoring and evaluation can be seen in their respective scope.

### **Knowledge Attitude Practice (KAP)**

To conduct monitoring and evaluation exercise, you need to plan activities, campaigns or programmes that will require to be monitored and evaluated. But to do that it is essential to know the existing knowledge base, attitude and practices of the community.

This activity will provide information that will aid in evaluating the extent of behavioural transformation of the people. This will help to determine the areas where IEC interventions are critically important and the types of activities that will achieve favourable responses from the people. This assessment is known as the 'Formative Evaluation', mentioned earlier or 'Knowledge Attitude Practice (KAP).

Usually the BEE or the Block Extension Educator will have a data on this. But in case he/she is unable to provide the information, a rapid appraisal analysis will give you the relevant data subsequent planning.

To conduct a KAP assessment following rapid appraisal method can be applied:

- Focus group discussions.
- Group meetings.
- Relative Ranking (PLA)
- Seasonality Diagram (PLA)
- IPC.

To conduct this assessment you may design your own format, but to facilitate that activity a few points are given for your consideration.

- What are the existing knowledge, attitude and practice regarding RCH and its services?
- What are the obstacles and barriers?
- Whose knowledge, attitude and practice must the IEC interventions attempt to change?
- What is the desired behaviour in terms of knowledge, attitude and practice?

On completion of the assessment, on a tabular format indicate the RCH areas, such as, maternal health, childhood diseases, nutrition, etc., where IEC inputs or interventions are required. These interventions can be either to create awareness or to encourage people

to seek relevant services for the improvement of the health status of the family.

### **Developing indicators for monitoring and evaluation**

Communication programmes or activities pose a special problem for evaluation. First, communication is not an independent function, but usually form a part of other programme functions. Secondly, most communication have both short term and long-term effects. For example promotion of literacy programmes. From the outside it may look like a failure, yet over the last decade the importance and relevance of education can be seen in the increase in the number of students as well as school buildings, in some states of the country. Third, communication may have intended and unintended effects. As communication programmes are usually in a context or in competition with other messages, it is possible communication evaluation may need to identify unintended effects or impact and not first those anticipated.

In order to monitor and eventually evaluate, it is necessary to develop indicators that will help to measure input and output levels. While developing these indicators it should be kept in mind what information is readily available at the primary health centre. The indicators should be comprehensive, reliable, valid and simple.

Given below is a sample format with indicators to measure impact of activities conducted in a specific area. The evaluation is being done after 6 months of continuous IEC activities such as plays, exhibitions, meetings, etc., on child health

S.No	ITEM	BEFORE	AFTER
1.	Infant mortality rate.		
2.	Number of newborn with weight less than 2500 grams.		
3.	Number of children detected malnourished (0-6 years).		
4.	Number of children receiving 1-10 dose of vitamin A.		
5.	Number of children (0-6 years) receiving complete immunization of each type (BCG, DPT, Measles, Polio ).		

However to monitor and evaluate change in attitude and behaviour the above format may not apply. Although you may be able to measure certain items, that could indicate behaviour change, for example, number of children receiving complete immunization of each type. In such a case you will need to develop your own indicators from the factors identified in Unit I of this module.

### ***Supervision of the functionaries***

The concept of supervision is to guide and help subordinates in their work. Training, guidance, demonstration, individual counselling and checking are the components of supervision to see that the work is done in the best possible way by the workers under their supervision. *Supervision is best done by direct observation.*

It is difficult to evaluate work from records and reports. In the absence of direct observation subordinates are liable to slacken their efforts or evade their duties.



## Supervisory methods

- Direct observation.
- Individual conference and group conferences.
- Staff meetings.
- Training sessions.
- Evaluation sessions.
- Review of records.

To conduct supervisory activities, you will require to draw-up a checklist according to the IEC activities performed by the functionaries. The items on the checklist are usually grouped and arranged in a logical order so that the list is easy to use. Be aware that the list should neither be too long nor too short.

An important process of supervision is letting the subordinate know of your assessment of his/her job performance. This is known as 'Performance Feedback'. This system has a high correlation with job satisfaction. Performance feedback as indicated all over the world, has a greater impact on workers performance than any other communication variable, including communication climate, co-worker communication, and even supervisor-subordinate relationship. In other words, workers like to know how they are doing.

### ***Feed back and follow-up of the IEC activities***

Although the objective of the RCH programmes to influence knowledge, attitude and behaviour over a long run, the immediate reaction of the process should also be tracked continually to provide as much feed back as possible.

As a medical officer you are responsible for several IEC activities being performed in your area of jurisdiction. But unless you are informed of the responses these activities are generating from the people, you will not be able to move forward. This can be obtained through 'Feedback' from your own team members, as well

as from anganwadi workers, school teachers, opinion leaders, mahila mandals, etc.

These people will help you to identify factors which are responsible for getting co-operation from the community and factors that are not acceptable by the community members. For example if you have organised a play that illustrates precautions that need to be taken to avoid RTI/STI infections and your team members came back and reported that as soon as the topic of the play was introduced; most of the women left the gathering. This feedback indicates to you that in that particular area such topics should not be discussed in a mixed gathering. This will help you to plan your follow-up activities in that area appropriately.

### ***TIPS ON FEEDBACK***

- Communicate freely with workers.
- Encourage workers to report on any IEC activity conducted.
- Seek the worker's point of view on the activity performed and their opinion on problem solution.
- Encourage transparency in your unit

### **KEY POINTS**

- Monitoring and Evaluation helps to provide a platform for improving services and correct programme drawbacks.
- Monitoring needs to be conducted frequently, where as evaluation is the cumulative result of monitoring over a period of time.
- KAP helps to provide the existing knowledge base, attitude and practices of the people.
- Indicators for monitoring and evaluation should be comprehensive, reliable, valid and simple.
- Supervision is best conducted by direct observation.
- Feed back is important for planning follow-up activities.

## TEST QUESTIONS

1. What is the purpose of monitoring and how do you monitor?
2. What is the basic purpose of evaluation and what are the two types of evaluation?
3. Is supervision and monitoring the same activity?
4. What are some of the methods to conduct KAP?
5. What kind of indicators can be developed for behaviour change?
6. Is feedback necessary? Why?

***After completion of reading this Communication Module the readers may reflect upon certain key issues covered and discussed in it. Those are:***

- 1) How effective communication helps in changing behaviours of both the clients and the providers.
- 2) Factors that influence behaviour.
- 3) Communication process and distortions in it.
- 4) What is IPC and how it helps in behaviour change.
- 5) Five dos in effective speaking.
- 6) Importances of non-verbal skills and active listening.
- 7) Techniques of questioning and interview.
- 8) Styles and approaches and skills for doing counselling.
- 9) P-Process of IEC planning – Analysis, strategic design, message and materials development, pre-listening, production management, implementation and monitoring planning.
- 10) Need and different techniques of social mobilisation.
- 11) IEC activity co-ordination and effective implementation of IEC plans.
- 12) Methods and techniques of monitoring and evaluation of IEC interventions.



# Maternal Health

for

## M.O.(P.H.C.)





## **Unit-1**

### ***SAFE MOTHERHOOD***

#### **1.1 PRE-PREGNANCY CARE**

##### **LEARNING OBJECTIVE**

At the end of this sub-unit, you should be able to:

- educate the community with regard to factors affecting safe motherhood during pre-pregnancy period/ pre-conception.

##### **CONTENTS**

1.1.1. Introduction

1.1.2. Factors affecting safe motherhood during pre-pregnancy/pre-conception.

1.1.3. How to advocate pre-pregnancy care/conception?

##### **1.1.1. Introduction**

The girl child needs special care and attention right from early childhood so that she reaches pregnancy with complete physical development in good, health and with good nutritional status.

### **1.1.2. Factors affecting safe motherhood during pre-pregnancy/pre-conception period**

You must be aware that

- The age 20-30 years is ideal for child bearing.
- Pregnancy should be planned and desired.
- Adequate spacing of 3-4 years should occur between pregnancies.
- Women should be well nourished, healthy and not suffering from anaemia, chronic malaria, TB, diabetes mellitus, heart diseases and hypertension.
- Those suffering from diabetes mellitus, heart disease and hypertension should be well controlled. They should be in optimum health before embarking on pregnancy.

### **1.1.3. How to advocate pre-pregnancy care?**

You should advocate the above points whenever the opportunity arise such as:

- Awareness general meetings with community members encouraging more active involvement of males and religious leaders where active.
- Mahila Mandal/Balika Mandal.
- Male and female youth groups.
- Elderly women and mothers-in-law.

<b>Advice before pregnancy is important for the safe motherhood and child survival</b>
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## **1.2 ANTE-NATAL CARE**

### **LEARNING OBJECTIVE**

At the end of this unit, you should be able to:

- explain the aims and importance of ante-natal care.



- estimate number of pregnant women anticipated in a particular population.
- diagnose pregnancy.
- ensure early registration of all the pregnant women in the area.
- elicit proper history, do clinical examination and routine investigations in ante-natal period.
- assess the risk factors and take the appropriate action.
- assess haemoglobin status, diagnose anaemia and manage
- give appropriate ante-natal advice.
- manage minor ailments.

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### 1.2.1. Introduction

You may be aware that in India over 95 per cent of maternal deaths occur among women who have never had antenatal care (ANC). The maternal mortality in our country ranges from 100/1,00,000 in Kerala to 1200-1500/1,00,000 in the Northern States with an average of 400/1,00,000. About 30% of the babies born are of low birth weight. The leading cause of this grim outcome continues to be infection, haemorrhage, anaemia and pre-eclampsia, which can be prevented if the woman had good antenatal care.

Antenatal care is the care of the woman during pregnancy. The primary aim is to achieve at the end of pregnancy a healthy mother and healthy child. Ideally this should begin soon after conception and continue throughout pregnancy.

Pregnancy is divided into three trimesters of 3-month periods. The first trimester is from the first day of the last menstrual period (LMP) to 12th week, second trimester is from 13<sup>th</sup> week to 28<sup>th</sup> week and the third trimester is from 29th week to 40th week.

**The duration of a normal pregnancy is 280 days from the first day of the last menstrual period (LMP) or 40 weeks or 9 calendar months plus 7 days.**

Antenatal Check-up: You must ensure that at least three visits are made during antenatal period. The women must be encouraged to visit more often. After registration the 1<sup>st</sup> visit should be before 20 weeks, 2<sup>nd</sup> at 32nd weeks and 3<sup>rd</sup> at about 36<sup>th</sup> weeks. You should ensure that the ANC card is duly filled up if available.

At least 3 check-ups are advised after confirmation of pregnancy and registration.

### 1.2.2 Aims of ante-natal care

The aims of antenatal care are:

- To promote and maintain good physical and mental health during pregnancy.

- To monitor progress of pregnancy.
- To detect early and treat appropriately, medical and obstetrical conditions, that would endanger the life or impair the health of pregnant woman or baby.
- To ensure delivery of a mature, live and healthy infant.
- To prepare the woman for delivery, breast-feeding and subsequent care of her child.
- To encourage the concept of having regular antenatal care from the beginning by the pregnant woman even in an apparently normal pregnancy.

### **1.2.3. Importance of antenatal care**

By now you must know that the importance of antenatal care is to:

- to confirm pregnancy and assess the period of gestation.
- to prevent maternal as well as neonatal tetanus.
- to facilitate health education regarding diet, exercise, rest, avoidance of unnecessary travel, during pregnancy and preparations for delivery.

### **1.2.4 Estimation of number of pregnant women**

The number of women registered should be checked with estimated number of pregnant women so that you can know whether all pregnant women are receiving the essential care. This would also help in planning the requirements for provision of appropriate services during pregnancy.

Refer to Block on Management.

### **1.2.5. Identification of pregnant women and importance of early registration:**

You should be able to tell the pregnant women and her relatives the importance of ANC and early registration.

You must tell them that it is important to register all pregnant women early at least before 12 weeks because it helps to:

- assess the health status of mother.
- obtain baseline information on B.P. Hb, weight etc.
- screen for risk factors early and manage appropriately by referring to FRU or district hospital.
- recall last menstrual period easily.
- do MTP if it is required. MTP can be done safely before 10 weeks; therefore early identification of pregnancy is very important.
- counsel on diet, hygiene, rest etc.
- build up good rapport with the pregnant women.

**A pregnant woman must get at least 3 check-ups during pregnancy other than registration. First before 16-20 weeks, second at 32 weeks and third at 36 weeks.**

If a pregnant woman comes within 20 weeks of pregnancy then you should :

- Screen and treat anaemia .
- Initiate prophylaxis for anaemia (If not anaemic).
- Screen for risk factors and medical conditions.
- Develop individualized birth plan.
- Immunize with tetanus toxoid.
- Investigate – Hb, blood group and Rh typing. Urine examination, VDRL (husband and wife) and blood sugar if facility is available.

During second check-up from 28 weeks to 32 weeks, you should detect:

- PIH - Pregnancy induced hypertension
- multiple gestation
- anaemia



- develop individualized birth plan
- give 2<sup>nd</sup> dose of tetanus toxoid
- assess for intra-uterine growth retardation (IUGR)
- repeat Hb estimation

During third check-up from 36 weeks onwards, you should detect:

- pregnancy induced hypertension.
- identify foetal lie/presentation.
- rule out cephalo-pelvic disproportion in primigravida after 37 weeks.

You should encourage her to visit more often, especially in the third trimester of pregnancy.

#### **1.2.6. Diagnosis of pregnancy**

The woman can come to you with symptoms of:

- Cessation of menstruation
- Nausea with or without vomiting
- Disturbance in micturition (increase in frequency)
- Fatigue
- Perception of foetal movements

On examination you may find:

- Breast enlargement
- Changes in skin colour of areola
- Discolouration of vaginal mucosa
- Enlargement of abdomen
- Softening of cervix and uterus
- Uterine enlargement
- Internal and external ballotment
- Ability to discern foetal parts

You can confirm the pregnancy clinically by

- Detection of FHS at 20 weeks by auscultation
- Perception of foetal movements by the examiner

Confirmation of pregnancy in early period (where facility is available).

- Detection of HCG in urine.
- Detection of foetus and placenta on USG.

### **1.2.7. Clinical assessment (History taking, physical examination and routine investigation)**

You must be aware that ante-natal check-up involves eliciting careful history and doing physical examination to determine the presence of any pre-existing high-risk factor and whether the pregnancy is progressing normally.

You can identify the complications, which can adversely affect a woman's health or the health of the newborn.

#### **(A) History:**

- **Date of last menstrual period**

You should calculate the expected date of delivery and calculate period of gestation at each visit. (Rule of thumb for calculating gestational period is 9 calendar months = 40 weeks) or LMP+9 calendar months  $\pm$  7 days also known as Neagele's rule. This is for a woman with regular menstrual cycles.

In case the woman has forgotten her LMP then the dating can be done by

- Noting the date of first positive pregnancy test

- Previous record of pervaginal examination about the uterine size
- Around 16-20 weeks-date of quickening - this will help to confirm EDD and to confirm that there is a live foetus.

- **Age**

Those who are less than 18 and more than 35 years are at a higher risk of complications.

- **Duration of marriage**

If there is a long period before conception the pregnancy becomes precious (without use any contraception).

- **The order of pregnancy**

Primigravida and those who have had 4 or more deliveries are at higher risk.

- **Number of living children**

If the family is complete (2 to 3 children) then you should counsel the couple to limit the family.

- **Last child birth/Last abortion**

- Interval less than two years from last pregnancy or 3 months from last abortion is a risk factor.
- Duration of lactation.
- Did the couple use any birth spacing methods - if yes what?
- Does she want this pregnancy (to be especially asked in first trimester in multipara)?

- **Problems during the previous pregnancy/delivery**

- Abortions or premature births.
- Eclampsia/ pre-eclampsia.
- Ante partum haemorrhage (APH).
- Malaria, anaemia, urinary tract infection.
- Complicated delivery such as prolonged labour, premature rupture of membrane.
- Post partum haemorrhage (PPH), retained placenta.
- Sepsis.
- Operation - especially LSCS or abdominal surgery (for ectopic/perforation during MTP) etc.
- Still birth or neonatal death.
- Induced labour.
- Baby weight at birth, sex and is it alive and well.

(Any of the above problems in a previous pregnancy makes the woman high-risk in this pregnancy; needing referral as indicated in the AN card (if available))

- **History of any Systemic Illness**

- Heart disease
- Diabetes
- Tuberculosis
- Hypertension
- Urinary tract infection
- Malaria
- Thyroid or any disease for which she has been advised to take medication.

(Presence of any systemic illness is a high-risk factor needing referral as indicated in the AN card)

- **Family History**

- Twins
- Congenitally malformed baby



- **Complaints during present pregnancy** (To be asked during each visit)

You should ask during each visit the following questions: Does she have any of the following complaints now in this pregnancy: (These are to be asked during each visit):

- Breathlessness
- Excessive tiredness
- Palpitation
- Puffiness of face
- Tightening of bangles or rings
- Headache or blurring of vision
- Bleeding or leaking per vaginum
- Pain abdomen at any stage of pregnancy
- Fever
- After 20 weeks of pregnancy ask whether at every visit she is feeling foetal movements well.

(Presence of any complaints could need action depending on their severity as indicated in the AN card.)

### **Key Questions (in history taking)**

- What was the date of last menstrual period?
- What is her age?
- What is the order of pregnancy?
- How many living children?
- When did she have the last delivery/abortion?
- Did she have any problem during the previous pregnancy/delivery?
- History of any systemic illness, significant family history.
- History of any complaints

## **(B) Physical Examination:**

### **General Examination**

- **Height**

While measuring height of the pregnant woman you should ensure that the woman should stand against the scale with her feet touching the wall/scale and head held straight. Those with height less than 145 cms or 4 feet and 10 inches are of high-risk in labour and should be counselled to deliver in a hospital.

- **Weight (Kg)**

Weight gain during the first trimester is minimal. However, the expected weight gain during pregnancy is around 10kgs. After first trimester the woman gains around 2 Kgs every month or 0.5 kg/wk. You should estimate the amount of weight she should have gained since her last visit [the calculation of 0.5 kg/week for the number of weeks since her last visit] and verified against actual weight gain. An excessive weight gain (more than 3 kgs in a month) should arouse a suspicion of pre-eclampsia/twins. Underweight women and women gaining less than 2 kgs should be referred to AWW for food supplementation and in follow-up visits it must be checked that the weight gain has returned to normal. In spite of supplementary feeding, if weight gain is poor then you should try to find the cause and manage accordingly.

- **Blood Pressure Recording**

You must be aware that the systolic blood pressure is defined as the BP at which the sounds first appear and diastolic blood pressure when the sound disappears. But during pregnancy the disappearance of the sounds occurs when the BP reading is very low, therefore diastolic blood pressure is recorded when sound tends to get muffled.

Blood pressure must be recorded at every antenatal visit. Systolic blood pressure of 140 mm Hg or more and/or diastolic pressure 90 mm Hg or more which is sustained (two consecutive readings at least 4 hours apart after rest) and develops after 20 weeks of gestation is suggestive of pre-eclampsia. Blood pressure of 160/110 mm Hg is a danger signal and the women must be referred to CHC/FRU immediately. Normally women who show a mid trimester fall of blood pressure remain normotensive throughout pregnancy but women who do not show this are at high-risk of developing PIH later on.

- **Pallor**

You should look for pallor on the nails, conjunctiva, tongue and palate.

- **Oedema**

As you know that oedema is characterized by puffiness of face

- Swollen fingers
- Swelling over abdominal wall (Foetoscope will make an impression on the abdomen)
- Presence of oedema feet - Firm pressure over the anklebone for about 10-15 seconds and see if a pit is formed. This is significant pitting oedema.

- **Breast Examination**

- The size and shape of the nipples are to be observed for inverted nipples and the pregnant woman advised accordingly.
- Crusting or soreness of the nipples is to be noted and woman advised as to how to take care of it.
- The breasts are to be palpated for any lumps or tenderness. If these are present then it may be due to fibroadenosis or fibroadenoma or any other tumor. Hence manage accordingly.

- **Respiratory system examination**

You should

- Note the respiratory rate (normal being between 16-18 per minutes)
- Look for any gross rib cage abnormality e.g. kyphoses, scoliosis,, pigeon chest etc.
- Auscultate the lungs for any crepitations, pleural rub and air entry.

- **Cardiovascular system examination :**

You should

- Look for prominent neck veins.
- Auscultate the first and second heart sounds in all the areas and if there is presence of diastolic murmur, loud harsh systolic murmur, thrill, or presence of arrhythmias. Suspect organic heart disease, if any of these are present. Refer to higher centre.

- **Abdominal Examination**

Abdominal examination is done to monitor progress of pregnancy, foetal growth, foetal lie and presentation and to auscultate foetal heart sounds.

To do proper abdominal examination:

You should ensure that the woman lies on her back with the hips and knees partially flexed having previously emptied her bladder. You should stand/sit to her right side, and examine the abdomen gently in a systematic manner.

You must divert the attention of the woman by conversation. The hand must be warm and the hand should be allowed to rest for a moment on the surface of the abdomen till the uterus is



relaxed before palpation is actually begun. You should avoid poking with the fingertips at all costs.

1. Palpate for height of the fundus. This indicates progress of pregnancy and foetal growth.
2. Palpate for foetal lie (whether longitudinal, transverse or oblique) and foetal presentation (vertex or breech or shoulder).

- **Fundal Height Measurement**

You will have to do fundal height measurement after 14 weeks when the uterus becomes an abdominal organ. Gestational period (in weeks) can be estimated from the fundal height after 14 weeks of gestation (Fig 1.5).

- You should correct dextro-rotation (uterus is more towards the right side) by pushing the uterus towards midline from right side using back of fingers of right hand.
- Simultaneously begin the palpation from near the xiphisternum using the ulnar border of the left hand. Keep palpating until the fundus is reached.
- Mark the top of the fundus.
- Ask the woman to stretch her legs fully. The upper border of the symphysis pubis is palpated and marked.
- The distance between the two markings is measured to the nearest mm. by placing the tape along the curvature of the anterior abdominal wall. The height in cms. corresponds to period of gestation in weeks after 24 weeks of pregnancy.

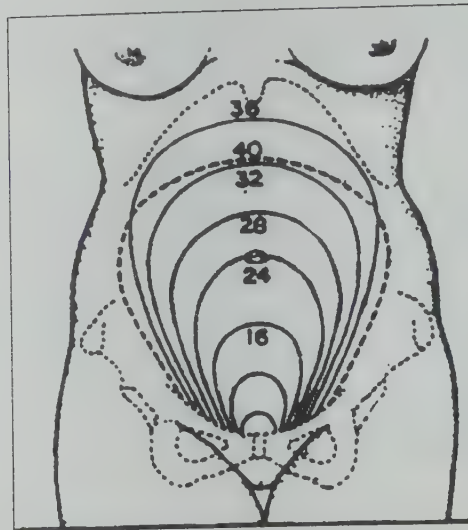


Fig. 1.1

Uterus size at different periods of pregnancy (numbers indicate weeks of pregnancy)

### **Fundal Height at different period of pregnancy:**

- |          |   |  |
|----------|---|--|
| 14 weeks | - | Just above symphysis.  |
| 16 weeks | - | Mid-way between symphysis pubis and umbilicus.   |
| 24 weeks | - | At the level of umbilicus.   |
|          | - | The distance between the umbilicus and the xiphisternum is divided into three equal parts.             |
| 28 weeks | - | At the junction of lower third and upper two-third of the distance between umbilicus and xiphisternum. |
| 32 weeks | - | Junction of upper and middle third between umbilicus and xiphisternum.                                 |
| 36 weeks |   | Just below the xiphisternum.   |
| 40 weeks |   | Fundal height comes down but flanks are full.  |

Fundal height and its co-relation with period of amenorrhoea.:  
If the height of the uterus is more than the period of gestation then it could be due to:

- Wrong dates
- Full bladder
- Multiple pregnancy

- Hydramnios
- Molar pregnancy
- Pregnancy with pelvic tumour

If height is less than the period of gestation then it could be due to:

- Wrong dates
- IUGR
- Missed abortion
- IUD
- Molar pregnancy
- Transverse lie

For examination to determine the lie of the foetus you palpate the uterus in the following way:

**(i) First Manoeuvre, Fundal Grip**

Palpate the uterine fundus gently between the two hands in an attempt to determine which pole of the fetus (the breech or the head) is occupying the fundal area. (Fig. 1.2)

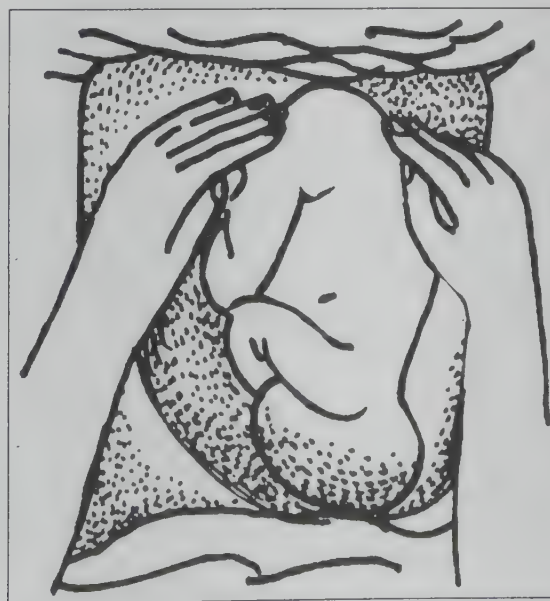


Fig 1.2  
Step-I Fundal Grip

## **(ii) Second Manoeuvre, Lateral Grip**

Now slip the hands along the side of the uterus. Palpate on either side of the uterus. By this means, the back of the foetus is identified as a continuous flat surface on one side of the midline, and the limbs as small irregular knobs. Often you will feel the fetus move under your hands. (Fig. 1.3)



Fig. 1.3  
Step-II Lateral grip

## **(iii) The Third Manoeuvre (Superficial pelvic grip)**

The third manoeuvre is not always necessary and, unless you perform it gently. It may be painful. Spread your right hand widely on the pubic symphysis. When the fingers and the thumb are approximated the presenting part can be felt between them and its mobility above the pelvic brim can be determined. (Fig. 1.4)

Although palpation is usually easy, occasionally the woman may be tense and the uterus contracted. In such cases it is better to wait for a while till uterus is relaxed rather than to persist with palpation.





Fig. 1.4  
Superficial pelvic grip

**(iv) Fourth Manoeuvre (Deep pelvic grip)**

You must face the foot end of the mother and with the hands on the lower part of the uterus, keep palpating downwards medially attempting to recognize the presenting part.

Usually it is the head, which is firm, large and rounded and unless fixed in the pelvis, is ballotable from side to side between the fingers. If the presenting part cannot be readily identified because it is fixed in the pelvis, the fingers are slipped further downwards and inwards until they dip into the pelvic brim. (Fig. 1.5)

If the woman cannot relax her muscles, you should tell her to flex her legs slightly and be told to breathe deeply. Palpate in between deep breathing.



Fig 1.5

Deep pelvic grip

After palpating note down the lie. The different types of the lies shown in Fig. 1.6 and Fig. 1.7

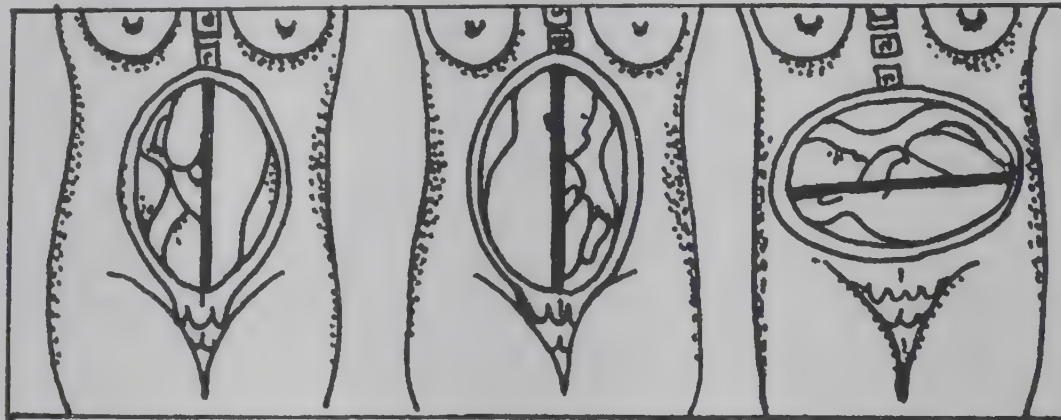


Fig. 1.6

Longitudinal Lie

Cephalic  
Presentation

Breech  
Presentation

Fig. 1.7

Transverse Lie

- **Auscultation**

You should auscultate for the foetal heart rate. This can be done with the foetoscope. Normal foetal heart rate is 120-160 per minute. Hearts rate more than 160 or less than 120/minute indicate foetal abnormality. Foetal heart is heard against the back of the baby.

## **(C ) Routine Investigation**

- **Haemoglobin Estimation**

Haemoglobin estimation is done during pregnancy at each visit.

- **Urine Test for Albumin and Sugar**

Test for presence of albumin and sugar in urine during every antenatal visit:

### **1.2.8. Advice during ante-natal visit**

You must give the following advice during antenatal visit:

- Iron and folic acid to be advised at each visit.
- Two injection TT to be taken 4 to 6 weeks apart first dose at the first visit whenever the patients comes to clinic or only one injection T.T. if previous child birth was within 3 years.
- To bring ANC card for appraisal at every visit.
- Pregnant woman may continue her usual activities throughout pregnancy if not tired.
- Hard and strenuous work should be avoided, especially in first and third trimester.
- Should sleep for about 8-10 hours at night and 2 hours in the daytime.
- Should take daily bath but be careful against slipping in the bathroom due to imbalance.
- Clean, loose comfortable, preferably cotton clothes to be worn
- Retracted nipples to be corrected manually during the last months to avoid problems in breast-feeding.
- Coitus to be avoided during the first trimester and during the last 6 weeks.
- Travel by vehicles having jerks is to be avoided.

- Patient and her attendant to be told about the symptoms and signs of complications like pain in abdomen, watery discharge per vaginum, bleeding per vaginum, headache, blurring of vision, vomiting, swelling all over body or feet, diminished foetal movements, undue breathlessness, palpitations, decreased urine output. You must tell them to bring the patient to the hospital whenever any of these occur.

### **1.2.9 Nutrition**

#### **Dietary advice during pregnancy**

- You should advise the woman to take a diet which is light, nutritious, easily digestible, rich in protein, minerals and vitamins, consisting of normal food plus atleast ½ litre of milk per day, one egg, plenty of green vegetables and fruits (locally available). The diet should be rich in fiber's so that she does not have constipation.
- You should advise her that she needs extra calories for
  - Maintenance of maternal health.
  - The needs of the growing fetus.
  - Successful lactation.
- You advise her a diet keeping in mind the socio-economic conditions, food habits and taste of the individuals.

### **1.2.10. Management of minor ailments of pregnancy**

Some of the minor ailments that you may have encountered are given below:

#### **1.2.10.1 Vomiting in Pregnancy**

Vomiting due to pregnancy (morning sickness) is an ailment of pregnancy during second and third month. It does not affect the health of the woman and gradually wanes off at 12-14 weeks. However, patient may be advised to take small frequent meals. She should avoid



greasy food, eat lot of green vegetables and drink plenty of fluid. She should take dry food like biscuits first thing on getting up in the morning.

If the vomiting persists and causes deterioration of health of the woman this is known as Hyperemesis Gravidarum. (Refer to 1.3.1.)

#### **1.2.10.2. Heart burn and nausea:**

Advise the patient to avoid spicy, rich foods. Take cold milk and bland diet. If severe then you can give her antacids.

#### **1.2.10.3. Frequency of micturition:**

It is experienced during early month's upto 10-12 weeks because of the pressure of gravid uterus on the bladder. It is relieved on its own. [If symptoms persist, then it may be due to urinary tract infection. Send urine for routine examination and where required for culture and sensitivity and manage accordingly].

You should reassure the patient. If symptoms persist then routine urine examination for pus cells and where required urine culture and sensitivity should be sent and give appropriate antibiotics. (If facility of urine culture and sensitivity is available).

#### **1.2.10.4. Constipation:**

It is a common symptom. Treatment is more in take of fluids, leafy vegetable, fibre rich diet, isabgol.

### **1.2.11. Risk assessment, appropriate management and referral.**

All pregnant women are at risk of complications. There are, however, some conditions, which predispose them to a higher risk of complications. You have to be alert to identify all high-risk pregnancies as early as possible. In some women there may be one or more high-risk factors.

- **Obstetric Factors**

- Gravidity: if primigravida is the only risk factor, then one has to consider if she can be delivered in PHC, grande multipara (more than 4 pregnancies) should be referred to FRU.
- Age: Elderly at and above 35 years; below 19 years.
- Height: All gravidae less than 145 cm (4 ft. 10 inch), under weight (a pre-pregnancy weight or less) or overweight (20% or over) as per height-weight standard.
- Multipara with bad obstetric history like difficult labour and loss of previous baby, caesarean section, hypertension in previous pregnancy, recurrent premature labour and abortion, intrauterine foetal death, previous third stage abnormalities, congenital malformation and neonatal deaths.
- Cases of disproportion (evident or suspects) due to pelvic contraction, pelvic tumour or primigravida with nonengaged head at or near term.
- Mal-presentations and multiple pregnancy.
- Obstetric complications - Pregnancy haemorrhage (threatened abortion, ante-partum haemorrhage), pregnancy induced hypertension (Pre-eclampsia; eclampsia)
- High-risk foetus – premature labour, intrauterine growth retarded foetus, Rh incompatible foetus, post maturity.
- Infertility - Conceived after treatment of infertility.

- **Medical Factors:**

Anaemia and under nutrition, cardiac disease, hypertension, diabetes mellitus, venereal diseases, chest diseases (pulmonary tuberculosis), hepatitis, syphilis, psychiatric disorders, thyroid disorders, obesity and others.

You should refer to FRU in the following situation:

- Bad obstetric history or repeated abortions.
- Bleeding during pregnancy (more than 12 weeks).
- P.I.H./Eclampsia.
- Abnormal presentation.
- Multiple pregnancy/overdistended uterus.
- Grande multipara.
- Previous H/O operative delivery e.g. caesarean section or difficult forceps.
- Age more than 35 years.
- Floating head in a primigravida at 38 weeks or later.
- Pre-term labour.
- Premature rupture of membranes (if labour pain does not start within 6-8 hours).
- Very big/very small baby.
- Hyperemesis gravidarum not responding to treatment.
- Heart disease in pregnancy.
- Jaundice in pregnancy.
- Old I.U.D more than two weeks with or without deranged coagulation profile.

### **1.2.12. Complications of early pregnancy**

The common complications of early pregnancy are the following:

1.2.12.1. Hyperemesis gravidarum.

1.2.12.2. Retroverted gravid uterus with retention of urine.

### 1.2.12.3. Vaginal bleeding during early month of pregnancy.

#### 1.2.12.1. **Hyperemesis gravidarum**

More commonly seen in primigravida, twins and vesicular mole.

This is the condition in which the pregnant woman is unable to retain anything taken orally resulting in metabolic acidosis.

- The woman will come to you with the following symptoms:
  - Can take nothing by mouth due to excessive vomiting.
  - Severe retching and nausea is present.
- On examination you will find the following signs:
  - She is dehydrated. The skin has lost its elasticity.
  - Her tongue is dry, brown and furred.
  - Tachycardia.
  - Rarely icterus (when it appears it is a grave sign).
- Treatment
  - Nil orally by mouth till vomiting persists.
  - Adequate IV fluids, 10% dextrose solution alternating with IV Ringer lactate over 24 hrs to ensure that urine output is atleast 60 ml per hour.
  - Injection Stemetil 5 mg 8 hrly. can be given.

Prognosis: With conservative treatment vast majority of patients improve. It is interesting to observe how the patients



who were vomiting earlier at home quickly stop vomiting and improve on isolation in a hospital bed.

#### **1.2.12.2. Retroverted gravid uterus with retention of urine**

Usually retroverted gravid uterus does not produce any symptom upto twelve weeks. After 12 weeks spontaneous correction of retroversion occurs and uterus rises above the pelvic brim and can be felt per abdominally when it remains retroverted it causes retention of urine at about 12 weeks gestation.

- The woman will come to you with the following symptoms:
  - Inability to void urine: retroverted gravid uterus causes the cervix to be pulled up behind the pubic symphysis resulting in elongation of urethra causing retention of urine.
  - Retention of urine with overflow incontinence.
  - Discomfort in lower abdomen.
  - Backache.
- On examination you will find the following signs:
  - A cystic and tender swelling in the lower abdomen arising from the pelvis (sometimes reaching above umbilicus) may be present.
  - On vaginal examination the cervix is high up behind the pubic symphysis and is directed downwards and forwards. Uterus is retroverted 12 weeks size and is felt below the cervix. A cystic mass is felt in anterior fornix.
- Treatment:
  - Put a self-retaining catheter and let urine drain continuously for 24 to 48 hours.
  - Examine urine for pus cells.
  - Urine culture and sensitivity if possible (where facility is available).
  - Capsule Ampicillin 500 mg 6 hourly for seven days.

- Ask the woman to lie prone following emptying of bladder. Spontaneous correction occurs after 24 to 48 hours and uterus become palpable.
- To prevent recurrences advise her to lie in left lateral or prone position till 16 weeks.

### **1.2.12.3. Vaginal bleeding during early months of pregnancy**

Vaginal bleeding during early months of pregnancy could be due to the following causes:

- a. Spontaneous abortions
- b. Hydatidiform mole
- c. Ectopic pregnancy

#### **a. Spontaneous abortions:**

You must be aware that expulsion of products of conception before 20 weeks is known as abortion. The types of abortion, diagnosis, complications and management are given in the Table below:

## TYPES OF ABORTIONS

SL. NO.	SYMPTOMS	THREATENED	INEVITABLE	INCOMPLETE	SEPTIC	MISSED	COMPLETE
a)	History of amenorrhoea Vaginal bleeding	Present Scanty bright red or blood stained discharge	Present Frank bleeding; it may be severe at times	Present Continuous or recurrent bleeding	Present Foul smelling discharge	Present Nil or dirty brown or sanguinous discharge.	Present May be present
b)							
c)	Abdominal pain	Commonly absent or slight, vague pain on back and lower abdomen	Severe colicky pains in the lower abdomen	Abdominal pain may or may not be present	Pain may or may not be present. Later on, with spread of infection to the pelvic peritoneum, severe pain the lower abdomen	Pain is absent.	Present

## TYPES OF ABORTIONS (Cont..)

SL. NO.	SYMPTOMS	THREATENED	INEVITABLE	INCOMPLETE	SEPTIC	MISSED	COMPLETE
d)	History of expulsion of the product of conception per vagina Constitutional symptoms	Nil	Nil	Present	May or may not be present	Nil	Present
e)		Nil	May be present. Tachycardia, low BP in case of heavy blood loss.	In severe blood loss, Tachycardia, pallor, low BP, symptoms of shock may be present.	Fever with chill is present, nausea, vomiting may be present, oliguria.	Absent	Absent
f)	Signs Uterus size-	Corresponding period of gestation	May be corresponding	Smaller than period of gestation	May be small with tenderness	Smaller than gestation	Smaller than period of gestation and Os closed
	Status of internal Os.	Closed	Open	Open in recent and closed in old	May be closed	Os closed	
g)	Character of vaginal discharge	Scanty bleeding	Frank blood and clots	Recent or old blood (dark brown)	Foul smelling purulent puslike discharge may be present	Thin brown or serosanguinous discharge may be present.	Scanty Fresh bleeding Or No bleeding



## TYPES OF ABORTIONS (Cont..)

SL. NO.	SYMPTOMS	THREATENED	INEVITABLE	INCOMPLETE	SEPTIC	MISSED	COMPLETE
h)	Complications	May become Inevitable or missed abortion.	May become complete abortion, develop haemorrhagic shock, may become septic if handled by untrained persons. Hb, urine for albumin and sugar.	May become septic abortion, can develop anaemia	Maternal death, renal failure, endotoxic shock, septicemia, DIC.	Co-agulation failure.	No complication if no interference
i)	Investigations	Hb, urine for albumin and sugar.		Hb, urine for albumin and sugar.	Hb, urine for albumin and sugar. DLC, TLC	Hb, urine for albumin and sugar. BT, CT, CRT	Hb%, Urine alb. and sugar
j)	Treatment	Bed rest, abstinence, folic acid (1 mg) daily. Reevaluation after 4 weeks or earlier in case of increased bleeding per vaginum or pain in lower abdomen.	Resuscitation with IV fluids, evacuation of the uterus by suction evacuation, Injection Ergometrine 0.2mg IV followed by check curettage.  If uterus is more than 12 weeks and bleeding is severe, start syntocinon drip and refer to FRU.	Suction curettage is to be done if the external os is open. Dilatation of cervix followed by blunt curettage is to be done if external os is closed.  If the uterus is more than 12 weeks then refer to FRU as in inevitable abortion.	Hospitalise the patient. Start Metronidazole, Ampicillin, Gentamicin, parenterally. If the os is open, uterus is <10 weeks then evacuate after 24 hours of antibiotics or earlier if she bleeds. No curettage, only digital evacuation is to be done. Monitor for complication and refer accordingly	If the uterus is <10 weeks size then suction evacuation may be done. If more than 10 weeks patient to be referred to FRU.	No treatment is required if you have inspected the products. If not sure of the completeness, do curettage (dilatation may not be required)

**b. Hydatidiform Mole**

This is an abnormal pregnancy where the chorionic villi are transformed into a mass of translucent vesicles resembling grape like structures.

The woman will come to you with the following symptoms:

- Amenorrhoea for a few weeks.
- Recurrent blood stained discharge or frank haemorrhage per vagina.
- H/O expulsion of grape like vesicles.
- Nausea/excessive vomiting may be present.

On examination you will find the following signs:

General examination: Pallor (moderate to severe) and tachycardia.

P/A                    -Large for dates uterus, it may be normal or small for dates  
Soft cystic or doughy uterus.  
Foetal parts are not palpable.  
Foetal heart sounds are absent.

P/V                    -Blood stained discharge or frank blood stains or vesicles

Management: Refer to FRU.

**c. Ectopic pregnancy**

When pregnancy occurs outside the uterine cavity. It is known as ectopic pregnancy. The commonest site is the fallopian tubes. As you know it is a life threatening complication.

**Symptoms:**

- A short period of amenorrhoea is generally present but in 20% it may not be present.
- Sudden agonising pain in iliac region followed by slight vaginal bleeding or dark colour discharge.
- Fainting attack is often present.

**Signs:**

- May present as acute abdomen.
- Signs of severe anaemia and shock i.e pallor sweating, cold clammy skin, tachycardia, hypotension.
- P/A Tenderness in lower abdomen, muscle guarding may be present and fluid thrill may be elicited.
- P/V Vaginal tenderness is present, cervical movements are painful.
- A soft fluctuating tender mass may be felt in the posterior or lateral fornix.

**Investigation:**

Hb%

Urine for pregnancy test, Hb low

**Management:**

Early diagnosis and immediate total salpingectomy with removal of gestational sac by laparotomy is indicated.

- Start management of shock.
- Patient is referred to FRU with adequate donors.

**1.2.13. Anaemia during pregnancy**

You must be aware that anaemia entails a decrease in concentration of red cells or haemoglobin (below 11 gm%) during pregnancy. Anaemia is considered mild when Hb concentration is 8

to less than 11 gm/dl. Moderate when it is 6.5 gm/dl to less than 8 gm/dl. And severe if Hb is less than 6.5 gm/dl.

Anaemia is directly responsible for 20% maternal death and is an associated cause in another 20%. Thus it is imperative to be able to not only manage a case of anaemia but also implement measures for its prevention.

#### **1.2.13.1 Prevention of Anaemia**

Despite the fact that most of the anaemia seen in pregnancy is largely preventable and easily treatable if detected in time, anaemias still continue to be a common cause of maternal mortality and morbidity in India. Distribution of IFA tablets from 4<sup>th</sup> month onwards will help in preventing anaemia. Ensuring that the pregnant woman receives the IFA tablets that are distributed free by the Govt. of India will help in reducing the incidence. (the Government is distributing hundred tablets of IFA only). Ideally she should take IFA from the fourth month onwards to three months after delivery. If she can afford to purchase them, then you should encourage her to buy them and take them during this period.

The practice of employing iron utensils for cooking and not discarding the water in which rice or vegetables have been cooked also ensure that iron and nutrients are not lost. This entails no extra expenditure and attempt can be made to ensure its adoption. By advocating the use of locally available food that are rich in iron, nutrients and proteins like jaggery, groundnut you can also help in reducing the prevalence of nutritional anaemia.

#### **1.2.13.2. Causes of Anaemia:-**

As you know the causes of anaemia are:

- Nutritional



- a) Iron Deficiency
- b) Folic Acid Deficiency
- c) Both Iron and Folic Acid Deficiency

- Parasitic infections like Hookworm and Malaria.
- Chronic bacterial infections – Chronic UTI, Tuberculosis etc.
- Rare conditions like Thalassemia Minor, Sickle Cell Anaemia

### **1.2.13.3.Types of Anaemia**

As you know the types of of anaemia are

- Hypochromic Microcytic Anaemia
- Macrocytic Anaemia
- Dimorphic Anaemia
- Normocytic Normochromic

Commonest type of Anaemia is Hypochromic Microcytic Anaemia followed by Dimorphic Anaemia. Dimorphic Anaemia is associated with many complications.

### **1.2.13.4.Clinical Presentation**

You must be aware that the clinical presentations depend mainly on the degree of anaemia present. Symptoms of easy fatigue, weakness, breathlessness on exertion, loss of appetite, palpitation on exertion, swelling of face and feet are suggestive of anaemia.

#### **• On Examination**

On examination you will find Marked Pallor, generalised swelling, glossitis, haemic murmur, hepatomegaly

Slight enlargement of spleen is seen with chronic malaria.

You must look for signs of congestive heart failure like raised venous pressure of neck veins, dyspnoea, hepatomegaly which

may be tender at times, ascites, oedema feet, crepitations in lung bases.

### **1.2.13.5. Investigation**

You must carry out the following investigations depending on the facility available:

- Hb estimation (If facility is available then the following investigation are to be carried out.).
- Packed Cell Volume (if available for confirmation of Haemoglobin status).
- Peripheral Smear for type of Anaemia :
  - a. Hypochromic Microcytic is seen in iron deficiency anaemia.
  - b. Dimorphic picture is seen in iron and folic (Acid) deficiency anaemia.
  - c. Macrocytic anaemia is seen in Vit. B 12 and folic acid deficiency.
  - d. Normochromic normocytic anaemia is seen in chronic infections.
  - e. Abnormal White Blood Cells are seen in Leukemias.
- Stool for ova, cyst
- Urine analysis to detect UTI
- Hb electrophoresis if available (for Haemoglobinopathies)

### **.2.13.6. Treatment**

- a. Iron deficiency anaemia:
  - Early pregnancy: You can treat mild to moderate anaemia easily with oral iron and folic (Acid) 200ms/day.
  - You should do deworming by giving Mebendazole 100 mg twice daily for three days. (After first trimester of pregnancy).

- You should advice diet rich in protiens and iron.
- You should give Vitamin C tablets.
- UTI if present should be treated.
- Oral Iron is as good as parenteral iron. Response is seen in 3 weeks time by Hb estimation. The rise is at the rate of 1 gm per week. If there is adequate time before 36 weeks to correct anaemia then she can be managed at the PHC with the above treatment. Otherwise, refer her to FRU.

Parenteral iron may be given if patient is unable to take orally iron tablets, she has excessive vomiting or has poor compliance. It should not be given to patients who are allergic to parenteral iron or to patients of haemoglobinopathies.

The required total amounts of iron in milligrams can be calculated by the following formulae.

Weight in pounds x deficit of Hb x 0.3 + 300 mg.  
Each amp contains 2 ml of imferon  
And 1 ml contains 50 mg of iron

Side effects are headache, joint pains and rarely anaphylactic shock. Hence it should be given after test dose.

Severe anaemia-Refer to FRU

- In late pregnancy if anaemia is severe, then blood/packed cells can be given to improve oxygenation.

b. Anaemia due to Folic (Acid) and Vitamin B12 deficiency.

Macrocytic anaemia during pregnancy is caused by the deficiency of folic (Acid) and Vitamin B12. Vitamin B12 deficiency can be associated with chronic tropical sprue. The diet should be supplemented with the Vitamin.

c. Dimorphic Anaemia : It is due to iron and folic acid deficiency

Three Injections of Inj. Vitcofol 30 mg. Daily I.M followed by oral iron and folic acid or injectable if needed.

Those who do not respond to IFA therapy should be investigated for Haemoglobinopathies like Thalassemia, Sickle Cell Anaemia. Refer them to FRU.

### **Complications of Anaemia During Pregnancy**

1. Preterm labour.
2. Mother is prone to infections.
3. Congestive cardiac failure.
4. Ante-partum haemorrhage.
5. Post-partum haemorrhage.
6. Maternal mortality.
7. Foetal complications like prematurity with all its disadvantages, IUGR, IUD.

#### **1.2.14. Complications of late pregnancy**

By now you must have encountered several complications of late pregnancy some of which are described briefly.

##### **1.2.14.1. Pre-eclampsia**

Pre-eclampsia and eclampsia are the important causes of maternal mortality and morbidity. Though eclampsia can be prevented most of times pre-eclampsia cannot be prevented. Early identification and prompt management of pre-eclampsia will help you to avoid the serious complication of eclampsia.

You must be aware that pregnancy induced hypertension (PIH) or pre-eclampsia is the development of hypertension with or without proteinuria with edema or both induced by pregnancy after the 20<sup>th</sup> week of pregnancy and sometimes earlier in presence of H.mole.



- **Diagnosis**

As you know the clinical features are rise in blood pressure, abnormal weight gain, edema and proteinuria.

- Blood pressure

If BP is 140/90 mmHg or more or an increase of 30 mm systolic or 15 mm diastolic over baseline values on at least 2 occasions 6 or more hours apart is diagnostic of pregnancy induced hypertension.

If there is no mid trimester fall of blood pressure as compared to the previous blood pressure then she is a potential candidate for developing PIH.

- Weight Gain

You should suspect pre-eclampsia if weight gain is sudden and excessive i.e. more than 1 kg in a week or 3-kg in a months.

- Edema

Edema over the hands, face and feet that persist even after adequate rest is a sign of PIH.

- Proteinuria

Proteinuria is defined as 300 mgs. or more urinary protein in 24 hrs. or 100 mgs./dl or more in at least two random urine specimens collected 6 hours apart.

**SUSPECT PRE-ECLAMPSIA IF:**

Weight gain of 3 kg or more in one month.

Oedema, especially of the hands and face and pitting in the legs.

**DIAGNOSE PRE-ECLAMPSIA IF:**

Increase in systolic pressure to 140 mm Hg or more

Increase in diastolic pressure to 90 mm Hg or more

Proteinuria

- **You must keep the following points in mind while managing women with mild PIH**
  - Bed rest in left lateral position.
  - Examination twice weekly.
  - The patient with a blood pressure of 130/90 and no other complications at 37 weeks of gestation should be referred to FRU for induction of labour.
  - Pregnant woman should be examined twice a week from the time the PIH is diagnosed.
  - Patient should be told of the warning signs and symptoms of impending eclampsia and to report FRU.
- **You must suspect impending eclampsia when the woman complains of :**
  - Headache: frontal usually not relieved by analgesic severe. headache usually precedes a convulsion.
  - Epigastric pain, vomiting.
  - Visual disturbance may range from slight blurring of vision to partial or complete blindness, diplopia, oliguria.

**DANGER SIGNS OF IMMINENT ECLAMPSIA**

Complaints of headache, visual disturbances, epigastric pain and oliguria.

- **Management of Severe pre-eclampsia**

- Refer the patient to FRU.
- You should refer the patient with uncontrolled PIH or severe PIH or imminent eclampsia to a hospital with facilities for intensive.
- Maternal and fetal care as she may require immediate termination of pregnancy.
- Before referral stabilise the blood pressure of the patient with the following :
  - i. Nifedipine (10 mg.) can be given orally or sublingually. Side effects – headache, tachy cardia.
  - ii. Sedation; Inj. Largectil (50 mg.) IM. can be given.
  - iii. Inj. Diazepam (10mg) IM.

#### **1.2.14.2. Eclampsia**

A pregnant woman with pre-eclampsia if not treated properly or despite treatment continues to worsen, may develop eclampsia. This is a life-threatening emergency and is a major cause of maternal and foetal death.

Hypertension, proteinuria, edema and convulsions characterize eclampsia.

The convulsions may be in the antenatal period, (ante-partum) during labour (intra-partum) and 48 hours after delivery (post-partum).

All pregnant women with convulsions should be considered to be eclamptic unless proved otherwise.

- **Refer to FRU after giving primary treatment**

Patients who develop fits or show any of the danger signs of imminent eclampsia should be transferred to the hospital immediately using the quickest mode of transportation. You should ensure that a health worker accompanies such patients with a referral note.

Refer to section on broad guidelines for referral

- **Before transportation give:**

- Diazepam 10 mg IM
- Nifedipine 10 mg tablet, sublingual.

- **During transportation**

- The woman must lie on her side with the head turned. Such a patient can suffocate if she is lying flat on her back as the tongue can fall back and block the airway.
- Put a soft gag made of cloth between the teeth so that she does not bite her tongue in case she has convulsions on the way to the hospital.
- Tell the health worker who is accompanying the patient to check blood pressure after 20 minutes. If the pressure is not less than or equal to 140/90 tell her to repeat the dose of Nifedipine.
- Establish intravenous line with proper splint applied.
- Give oxygen inhalation if available.
- Start antibiotics.
- Do continuous catheterisations (note the urinary output at the time of catheterisation).

Shift to the FRU/tertiary centre along with an ANM and a referral note.



- **Post-partum Management**

Patient is to be reevaluated two weeks following discharge from hospital.

B.P. is to be monitored. Normally it comes down within 2 weeks. If it persists than beta-blocker or methyldopa is to be prescribed.

If it persists beyond six weeks then refer to a specialist for further evaluation to exclude underlying pathology.

### **1.2.14.3. Preterm labour**

Pre-term labour is defined as premature termination of pregnancy at any time between 28 and 37 weeks:

- The pregnant woman can come to you with complaint of pain in lower abdomen.
- On examination you will palpate contractions and there may be cervical softening and effacement.

You should suspect preterm labour when:

- Uterine contractions are at least one-in 10 min. and lasts 30 secs or more.
- Cervical dilatation progress from 2 to 3 cms. Effacement of cervix also progresses to 50% or more.

- **Treatment**

You must give her

- Bed rest
- Sedation by injection Diazepam (10 mg.) IM
- Inj. IV Ringer Lactate (500 ml.)
- Inj. Duvadilan (10 mg.) IM (if available)

Refer her to FRU

#### **1.2.14.4. Premature Rupture of the Membranes (PROM)**

Spontaneous rupture of the membranes any time during pregnancy beyond 28 weeks but before the onset of labour is known as Premature Rupture of the Membranes (PROM). When it occurs near to term patient goes into spontaneous labour within 6-12 hours. In case they do not go into labour or there is preterm PROM she should be referred to FRU.

- **Confirmation of diagnosis (at PHC level)**

You can confirm the diagnosis by

- Speculum examination – to see liquor escaping through the cervix.
- pH detection by litmus paper – if 7-7.5 then its liquor amnii.
- Fern test (take a drop of liquor from the vaginal pool put it on a slide and allow it to dry. See under microscope. Small fern pattern suggests PROM.

- **Treatment**

- do minimal vaginal examination after the initial check for cord prolapse and for collecting material for fern test.
- start antibiotics e.g. Ampicillin 500 mg. 6 hourly.
- put her on bed rest.
- advise her to keep sterile vulval pad.
- if the patient is nearing term and the labor starts within 6 hours then manage accordingly. If labour does not start within six hours refer to FRU.
- if pregnancy is less than 37 weeks then refer to FRU.

#### **1.2.14.5. Intra-uterine growth retardation (IUGR)**

Intra-uterine growth retardation (IUGR) is said to be present in those babies where birth weight is below the tenth percentile of the average for the gestational age. The growth retardation can occur in preterm, term or post-term babies. The birth weight is less than 2.5 kgs at term in these babies.

- **You must suspect IUGR when:**

- Maternal weight gain remains stationary or at times is less than 2 kgs/month during the second half of pregnancy.
- There is fundal height deficit of four weeks or more.

- **Management:**

You must advise her to:

- Take adequate bed rest (2 hours after lunch and 8 hours at night) in left lateral position.
- Avoid smoking and alcohol.
- Correct malnutrition by adequately balanced diet (high proteins, vitamins, minerals calories).

You must refer to FRU for further management

#### **1.2.14.6 Intra-uterine foetal death (IUD)**

This is the intra-uterine death of the foetus in utero.

- You must suspect IUD when the woman comes to you with the complaint of :
  - Cessation of foetal movement.
  - A dirty brown discharge per vagina.

- On examination you may find :

- Regression of signs of pregnancy in the breasts.
- In a case of long-standing foetal death, milk secretions are seen.
- Per abdomen.
  - i. Height of the fundus becomes less than the corresponding period of amenorrhoea as the uterus regresses or does not increase in size. In some cases repeated examinations for successive two weeks may be needed to be certain of the diagnosis.
  - ii. No active foetal movement is felt.
  - iii. No foetal heart sound is audible on repeated examinations by the stethoscope and ultrasonic doppler foetal monitor. This is a strong evidence for foetal death.
  - iv. The foetal head may have the feeling of an eggshell crackling due to softening of the brain and overlapping of the cranial bones. This is a diagnostic clinical sign.
- Pervaginal examination.

Dirty brown discharge her vagina

a soft head with overlapped cranial bones is also diagnostic.

Diagnosis of IUD cannot be made clinically till 2 weeks after foetal death with certainty. Repeated clinical examinations over 2 weeks followed by confirmation through skiagram or ultrasound are required for diagnosis.

- **Treatment:**

Wait till 14 days (after the patient stops feeling the foetal movements) for the spontaneous expulsion of the products of conceptions, if not, then refer to FRU/district hospital.



### **1.2.15. Medical disorders during pregnancy**

During pregnancy the following medical disorders can be found:

- 1.2.15.1 pregnancy with heart disease
- 1.2.15.2 pregnancy with diabetes
- 1.2.15.3 pregnancy with urinary tract infection
- 1.2.15.4 pregnancy with jaundice
- 1.2.15.5 pregnancy with malaria
- 1.2.15.6 pregnancy with tuberculosis.

#### **1.2.15.1. Pregnancy with heart disease**

Organic heart disease is the fourth most common cause of maternal deaths after haemorrhage, infection and hypertension. Heart disease during pregnancy constitutes 10% of indirect cause of maternal mortality.

You must screen all antenatal patients for any cardiac problem during first visit, as this may be the first time that she comes for check-up.

The physiological changes of normal pregnancy may mimic features of heart disease, hence if there is any doubt of diagnosis, refer the case to a cardiologist for confirmation. (If available or refer to FRU/district hospital).

Suspect organic heart disease during pregnancy if:

- There is presence of diastolic murmur.
- Cardiac enlargement.
- Loud harsh systolic murmur associated with thrill.
- Presence of arrhythmia.
- Thrill in any area.

- **Management**

Refer to FRU/district hospital where physicians are available.

If the patient refuses to go to FRU then explain the prognosis to the patient and her attendants. You must advise her that there is an increased risk of IUGR, preterm delivery and foetal death. There is an increased risk of cardiac decompensation between 28 and 32 weeks and during labour and post partum period. If despite this she still does not go then advise her:

- Rest: Rest in bed for 10 -12 hours each night and 2 hours in afternoon.
- Diet: Low salt to prevent fluid retention.
- Prevent and treat Anaemia.
- Prevent and treat infection and administer prophylactic injection Penidura (long acting) 1.2 mega units every 3 weeks IM/ (after sensitivity test.)
- Hospitalisation is required depending upon the grade of disease and the period of gestation.

You must be knowing the grading of heart disease according to the classification of the New York Heart Association which is as follows:

Grade I	Patients with cardiac disease but no limitation of physical activity.
Grade II	Patients with cardiac disease with slight limitation of physical activity. The patients are comfortable at rest but ordinary physical activity causes discomfort.
Grade III	Patients with cardiac disease with marked limitation of activity. Discomfort occurs with less than ordinary activity.
Grade IV	Patients with cardiac disease with discomfort even at rest.

Refer to FRU for hospitalization as follows:

Grade I (N.Y.H.A)	At 38 weeks to ensure hospital delivery.
Grade II	At 28 weeks and hospitalised till delivery.
Grade III & IV	Remain in hospital throughout pregnancy.

Hence you must refer the patient to the F.R.U. for care under a cardiologist as well as trained obstetrician.

#### **Management of pulmonary oedema at Primary Health Centre**

- Propped up position.
- O<sub>2</sub> inhalation.
- Injection Lasix 20 mg IV.
- Injection Morphine (15 mg) I.M.
- Refer to F.R.U.

You must advise her about contraception. She should be advised about barrier contraception. Permanent sterilization may be offered after completion of family and you must tell her husband that vasectomy is the best choice.

#### **1.2.15.2. Pregnancy with Diabetes Mellitus**

It is a state of carbohydrate intolerance resulting from inadequacy of insulin secretion or in-effectiveness of insulin action. Gestational Diabetes: It is carbohydrate intolerance of variable severity with onset or first recognition during present pregnancy.

- You must suspect diabetes and refer to FRU when there is:
  - Positive family history of diabetes in the first-degree relatives e.g. sibling or parent.
  - Gross obesity.
  - Previous history of unexplained perinatal death, delivery of a large infant (> 4 kgs), congenital anomaly, prematurity.

- Urine specimen showing fasting glycosuria (second fasting urine sample).
- Development of macrosomia, polyhydramnios.
- Recurrent severe moniliasis, urinary tract infection.
- If the fasting blood sugar exceeds 90 mg/dl or if 2 hours post prandial blood sugar exceeds 120 mg/dl on routine check-up.
- Glucose challenge test (Spot test): This is the best test for screening gestational diabetes. The woman is given 50 gms of glucose orally. It is not necessary to follow special diet before the test. Plasma glucose is estimated one hour later. If plasma glucose is more than 140 mg/dl then she may have gestational diabetes.

- **Effect of pregnancy on diabetes:**

As pregnancy advances insulin requirement increases to achieve metabolic control. There may be progressive diabetic retinopathy and diabetic nephropathy. Hence refer to FRU.

- **Effect of diabetes on pregnancy:**

There is increased incidence of:

- Spontaneous abortions
- Congenital anomalies
- Polyhydramnios
- Pre-eclampsia
- Infections
- Macrosomia and birth trauma.
- Intra-uterine death, specially in the last 4 weeks of pregnancy. Adequate control can prevent this complication.
- Respiratory distress syndrome.
- Neonatal hypoglycaemia, hyperbilirubinemia, hypocalcemia and hyperviscosity in the newborn.
- Hence refer to FRU.



- **Management:**

Patients with abnormal GTT or blood sugar profile must be referred to FRU/district hospital.

- **Contraception:**

Sterilization to be advised once the family is completed. Barrier methods should be used for spacing of births. IUCD may be advised for well-controlled diabetic patient.

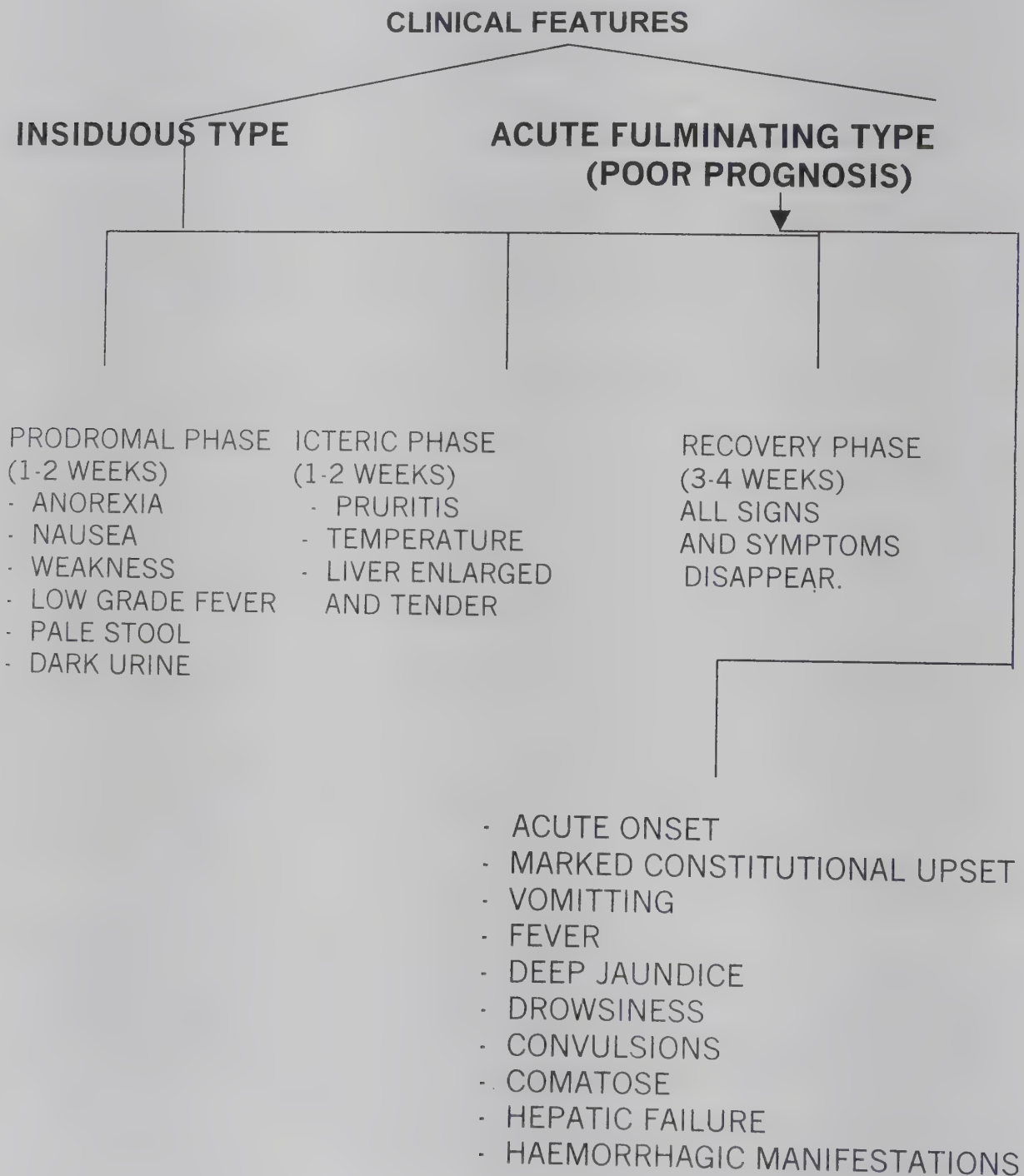
### **1.2.15.3 Pregnancy with urinary tract infections**

It is the infection of renal pelvis, ureter as well as renal parenchyma.

- You must suspect UTI in pregnancy when there is
  - fever with chills and rigor,
  - pain in the flanks,
  - dysuria.
- Effect on pregnancy: There is higher incidence of
  - Abortion,
  - preterm labour,
  - intrauterine growth retardation,
  - intrauterine foetal death due to hyperpyrexia.
- **Management of UTI**
  - In acute attack, patient should be hospitalized, midstream urine should be collected for protein, sugar and pus cells.
  - If possible send urine for culture and sensitivity test.
  - If there is fever with vomiting, intra-venous fluids may be necessary, urinary output is carefully measured.
  - Start Cap. Ampicillin (500 mg.) 6 hourly.
  - If no response send to FRU.

#### 1.2.15.4. Pregnancy with jaundice

Yellow discoloration of the conjunctiva is known as icterus or jaundice. The serum bilirubin level exceeds 2 mg % (normal being 0.2 – 0.8 mg %) to produce yellow staining of tissues.



- **Management**

Whenever a pregnant woman with icterus comes to the PHC, you must refer her to tertiary facility with blood donors for proper investigations and management.

- **Prophylaxis and prevention:**

Improvement in sanitation & safe drinking water (boiled water during rainy season) can help preventing.

### **1.2.15.5. Pregnancy with Malaria**

The mother becomes anaemic due to haemolysis. There is a chance of fever getting flared up in the puerperium. The pregnant woman may come to you with:

- fever with chills and rigors. Sometimes with headache and vomiting,
- intermittent high temperature,
- anaemia,
- hepatosplenomegaly,
- jaundice in severe forms e.g. cerebral malaria which may simulate eclampsia.

- **Effect of malaria on pregnancy:**

As you know malaria may cause increased incidence of:

- abortions,
- " premature labour,
- IUGR ,
- still birth. This may be due to high fever or due to placental parasitization as a result of which intervillous-space gets blocked resulting in foetal anoxia.

- **Investigations**

You must carry out the following investigation:

- Peripheral smear for malarial parasites, Hb estimation.

- **Treatment**

Tablet Chloroquine	4 tablets (600 mg) stat. 2 tablets after 6 hours 1 tablets BD for 2 days (Total 10 tablets.)
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Chloroquine prophylaxis to be done in malaria endemic area. 2 tablets weekly to be given to the pregnant woman as Primaquine cannot be given during pregnancy.

In therapeutic doses anti-malarial drugs have no effect on the fetus.

#### **1.2.15.6 Pulmonary Tuberculosis with pregnancy**

You must be aware that pulmonary tuberculosis complicates 1-2 per cent of pregnancies in our country. The tubercular lesions in the lung may be active or quiescent.

You must suspect pulmonary tuberculosis with pregnancy if the woman reports to you with

- Low grade fever
- Cough not responding to treatment.
- Weight loss.
- Lymphadenopathy

Most cases can be diagnosed on the basis of a history of cough and weight loss, positive tuberculin skin test, and X-ray chest. X-ray is not done routinely in pregnancy and should specially be avoided in the first trimester because of risk to the foetus. In-



patients with suggestive history or physical examination chest X-ray should be done after shielding the abdomen to confirm the diagnosis. Hence you should refer to FRU.

- **Treatment**

Treatment of active tuberculosis during pregnancy is only slightly different from that in non-pregnant patients. Drug treatment should be done in consultation with a physician. Patient should be given Isoniazid (Isonex) 300 mg orally along with tablet Ethambutol 800 mg daily. In active cases treatment is continued for 18 months to prevent relapse. Addition of one or more drugs may be necessary to reduce the prolonged duration of treatment or in cases with extensive or severe disease. Streptomycin should be best avoided during pregnancy because of the risk of ototoxicity to the newborn. The role of Rifampicin in congenital malformations is not clear and should be given only after the first trimester is over. Isoniazid appears to be the safest drug during pregnancy. Pyridoxin 50 mg/day should be administered to prevent Isoniazid -induced neuritis due to vitamin B6 deficiency. All women on anti-tubercular treatment are advised to postpone pregnancy till therapy is complete. Refer to FRU.

- **Breast Feeding**

It is not contraindicated once the mother is non-infectious. However, if the lesion is active and in sputum positive cases, baby should be separated from the mother following delivery. The baby should be vaccinated with BCG as soon as possible and kept segregated for 6-9 weeks till baby's Montoux test becomes positive. Prophylactic INH can be given to the newborn. If the woman is sputum positive then consult paediatrician.

- **Prognosis**

If the pregnant patient is adequately treated with anti-tubercular chemotherapy for active disease, tuberculosis generally has no deleterious effect on the course of pregnancy or on the

foetus. Pregnancy if properly managed has no harmful effect on the course of pulmonary tuberculosis. Therapeutic abortion is not recommended for most tuberculosis patients.

## 1.2.16. Mal-presentations

The following table will help you to diagnose and manage mal-presentation.

	Abnormal presentation	Diagnosis	Management at PHC
<b>1.2.16.1</b>	Face presentation	<p>P/A Delayed engagement of head, sinciput is at a lower level than occiput, deep groove between rounded head and the smooth back</p> <p>P/V Face diagnosed by palpating the foetal mouth with alveolar margins, bridge of the nose, eyes and mentum (Chin)</p>	Refer to FRU as early as possible
<b>1.2.16.2.</b>	Brow presentation	P/A Same as in face	Vaginal delivery not possible hence refer
<b>1.2.16.3</b>	Breech presentation	<p>P/V Ant. Fontanelle felt in centre</p> <p>P/A fundal grip – hard globular mass felt</p> <p>Pelvic grip - soft broad</p> <p>Non ballotable breech felt</p> <p>Foetal heart sound heard at higher level than in vertex</p>	<p>Breech delivery has high perinatal mortality, hence refer to FRU</p>

	Abnormal presentation	Diagnosis	Management at PHC
<b>1.2.16.4</b>	Shoulder presentation	P/A fundal height less than dates Fundal grip empty Lateral grip – bulky soft breech and hard round foetal head is felt on either side. Pelvic grip empty	Spontaneous labour – Not possible in full term live foetus Refer to FRU
<b>1.2.16.5</b>	Twins	Unduly enlarged uterus multiple foetal parts felt. Foetal heart may be heard at two places	Refer to FRU
<b>1.2.16.6</b>	Cord presentation	Non-engaged head or mal-presentation P/V as dilated pulsation felt in cord like structure through membranes	Elevate foot end wherever possible refer to FRU



### **1.2.17. Screening for congenital malformations**

You must be knowing that congenital malformations in human foetus could be due to genetic, environmental or interaction between the two.

- **High-risk factors:**

You should suspect congenital anomaly in the fetus when there is:

- Hydramnios
- Severe IUGR
- Abnormal presentations like breech, face presentations, transverse lies and twins.
- Inability to palpate the foetal head per abdominally or very large foetal head.
- Elderly mother/father.
- History of drug intake in the first trimester.
- Uncontrolled diabetes mellitus.
- Hypothyroidism in the mother.
- Evidence of maternal infection in first and second trimester.
- History of mentally retarded offspring in the family.

- **Prevention :**

By giving folic acid 5 mg daily starting atleast three months before conception you can reduce the chance of having a baby with neural tube defects.

- Controlling diabetes properly.
- Avoiding contact with patient suffering from viral infection.
- Avoiding radiation and drugs.
- Advising the woman not to take any medicine without prescription.
- Early diagnosis of malformations should be done, as termination is safe in the early periods of gestation.

### **1.2.18 Self-assessment questions:**

1. List the leading causes of maternal mortality in India.
2. What are signs of imminent eclampsia?
3. Enumerate the risk factors for which you will refer the pregnant woman to FRU?
4. What are the danger signs during pregnancy for which you must refer to FRU?

### **1.3. INTRANATAL CARE**

#### **Learning Objectives:**

At the end of this sub-unit you should be able to learn to:

- identify the onset of labour and manage it.
- diagnose foetal and maternal distress.
- arrange equipment required for normal delivery.
- identify the abnormal labour and manage it.

#### **Contents:**

- 1.3.1 Introduction
- 1.3.2 Stages of labour
- 1.3.3 Signs of true labour
- 1.3.4 Management of first stage of labour
- 1.3.5 Monitoring of first stage of labour by partogram.
- 1.3.6 Identification and management of foetal and maternal distress.
- 1.3.7 Management of second stage of labour.
- 1.3.8 Management of third stage of labour.
- 1.3.9 Episiotomy
- 1.3.10 Perineal tears
- 1.3.11 Equipment required for normal delivery in the labour room.
- 1.3.12 Early identification of abnormal progress of labour
- 1.3.13 Management of abnormal progress of labour
- 1.3.14 Malposition
- 1.3.15 Malpresentations
- 1.3.16 Obstructed labour and threatening rupture
- 1.3.17 Rupture uterus
- 1.3.18 Post partum haemorrhage
- 1.3.19 Retained placenta
- 1.3.20 Shock
- 1.3.21 Acute inversion of the uterus
- 1.3.22 Pulmonary embolism by air, amniotic fluid or meconium

### **1.3.23 Self-assessment questions**

#### **1.3.1. Introduction**

As you know normal labour or eutocia is the process of expulsion per vaginum of a mature live foetus presented by vertex followed by the placenta and membranes spontaneously without any complications or delay.

When the patient with full term pregnancy reports to the PHC with labour pains you should take a full obstetric and medical history to rule out any high-risk factor and examine the patient after asking the immunization status and IFA prophylaxis. You should go through the records quickly to see if she has any risk factors so that she may be referred to the nearest F.R.U. without any delay.

You must do complete examination, which should include general examination. Look for pallor, oedema, icterus. Note her blood pressure, temperature, pulse and respiratory rate.

Local examination should include abdominal as well as vaginal examination.

In abdominal examination you should note the contraction of the uterus, lie of the foetus, position of the foetus, and the foetal heart rate.

- In vaginal examination note:
  - Leaking, bleeding, discharge per vagina. If leaking, colour of liquor.
  - Cervix - its consistency, degree of effacement, dilatation of os
  - Presenting part
  - Position
  - Station of presenting part
  - Presence or absence of membranes
  - Pelvic assessment



You must admit her if she is in true labour and you have not detected any high-risk factor on examination as well. Record the following findings in the partogram and monitor her labour. Partogram is described in detail later in this sub-unit.

- You must record the following in the partogram:
  - Dilatation of cervix in cm with time.
  - Descent of the foetal head .
  - Frequency of uterine contraction in 10 min and their duration in seconds.
  - Foetal heart rate.
  - Condition of membranes if intact as (I) and if ruptured, colour of liquor as (C) if clear, as (M) if meconium stained or (A) if liquor amnii is absent.
  - Moulding of foetal head as 0, +, ++, +++.
  - Maternal pulse, blood pressure, temperature, urine output, and medication if any.

### **1.3.2 Stages of labour**

You must know that the three stages of labour together take upto 12-14 hours in the primigravida and about half the time in multigravida.

- **First stage:**

First stage starts from the onset of labour pains till full dilatation of cervix.

It takes 12 hours in primigravida and nearly 6 hour in multipara.

- **Second stage:**

Second stage from dilatation of cervix to expulsion of foetus. It lasts for 2 hours in nullipara and 1 hour in multipara.

- **Third stage :**

Third stage of labour lasts for 5 to 10 minutes. It should not exceed 30 minutes.

### **1.3.3. Signs of true labour**

You can diagnose the labour by the following signs:

- Painful uterine contractions coming at regular intervals, progressively increasing in duration and intensity.
- Progressive cervical dilatation and effacement.
- Formation of bag of forewaters.
- Presence of show.

### **1.3.4. Management of first stage of labour**

While managing the woman in labour you must ensure:

- That bowel is emptied by giving enema at the time of admission during the first stage. It is not mandatory but it prevents soiling of the area during labour.
- The woman is given a clean gown to wear and asked to be ambulant if she is in first stage of labour.
- Posture:- During first stage she is ambulant as, lying flat on her back may give her supine hypotension.
- Nutrition - Only clear fluids are given to prevent dehydration. Solid foods are avoided to prevent any anaesthetic complication if surgery is required.
- Bladder- She passes frequently as full bladder may delay the progress of labour.

- **Monitoring of first stage of labour and maintenance of partogram**

You must be aware partograph is a tool, which you can use for management of labour. A partograph is used to record all

observations made on a woman in labour. Its central feature is a graph where dilatation of the cervix as assessed by vaginal examination is plotted. By noting the rate at which the cervix dilates you can identify women whose labours are abnormally slow and who require special attention.

By helping you to identify at an early stage those women in whom labour is slow, the partograph can become a sensitive tool in your hands.

It can help you to prevent prolonged and obstructed labour. It is also a very clear way of recording all labour observations on one chart, making it easy to detect any other abnormalities.

Before describing how to use the partograph, it is important to realise that it is a tool for managing labour only. It does not help you to identify other risk factors, which may have been present, before labour started.

Only start a partograph when you have checked that there are no complications of the pregnancy, which require immediate action.

You must make, observe and record in the following sequence:

- 1.3.5.1. Cervical dilatation
- 13.5.2. Descent of head- abdominal palpation of fifths of head palpable
- 13.5.3. Uterine contraction
- 13.5.4. Duration – shown by differential shading
- 13.5.5. The foetal condition
- 13.5.6. The maternal condition

13.5.7. Observations charted on the partograph (Fig. 1.3.1):

**PARTOGRAPH**

Name ..... Gravida ..... Para ..... Hospital No. ....

Date of admission ..... Time of admission ..... Ruptured membranes ..... hrs

FETAL HEART RATE	180																								
	170																								
LIQUOR MOULDING	160																								
	150																								
CERVIX (cm)	140																								
	130																								
Descent of Head	120																								
	110																								
CONTRACTIONS PER 10 MINS.	100																								
	90																								
Oxytocin U/L drops/min	80																								
	70																								
DRUGS GIVEN AND I.V. FLUIDS	60																								
	50																								
PULSE AND B.P.	40																								
	30																								
TEMP °C	20																								
	10																								
URINE	0																								

Time 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

Latent Phase Active Phase

Alert Action

Plot X

Plot O

Hours

Time



#### 1.3.5.1. **Cervical dilatation:**

To monitor the progress of labour you have to note the cervical dilatation.

- The first stage of labour is divided into the latent and active phase :
  - The latent phase (slow period of cervical dilatation) is from 0-3 cms with gradual shortening of the cervix. (effacement or taking up of Cervix)
  - The active phase (faster period of cervical dilatation) is from 3 cms to 10 cms (full cervical dilatation).
  - In the centre of the partograph is a graph Fig. 1.3.1 along the left side are the figure 0-10 against squares. Each square represents 1 cm dilation. Along the bottom of the graph are numbers 0-24. Each square represents one hour.

You must measure the dilatation of the cervix in centimetres (cm) and plot (recorded) with an 'X'. The first vaginal examination on admission includes a pelvic assessment and the findings are recorded. Thereafter, vaginal examinations are made every four hours, unless contraindicated. However, in advanced labour, women may be assessed more frequently, particularly the multipara.

## Example 1

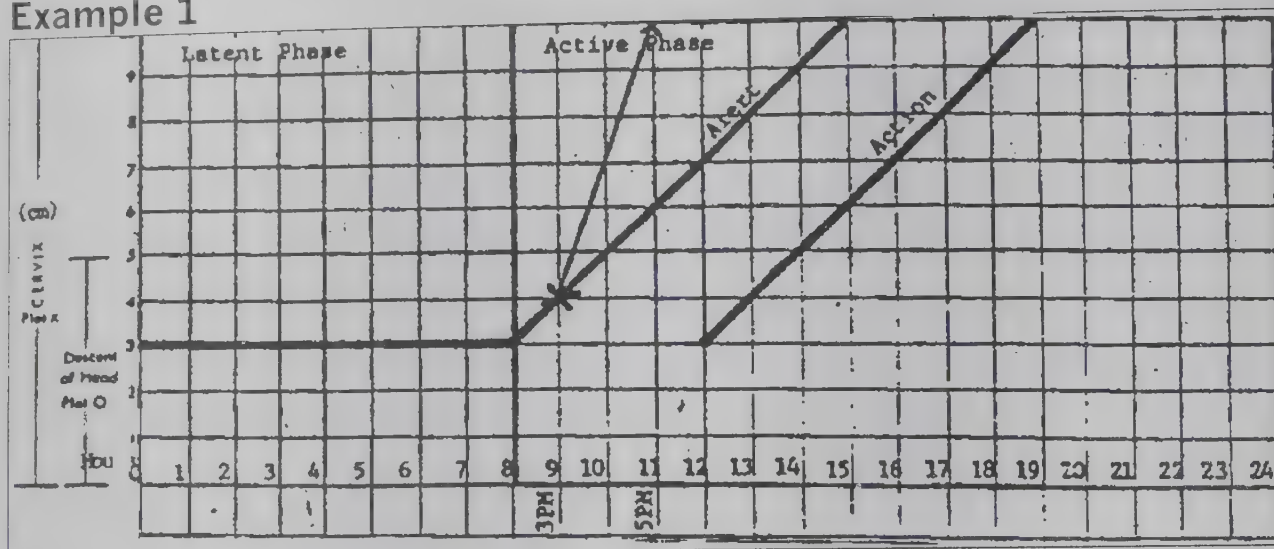


Fig 1.3.2. (Source : WHO/MCH/88.4).

Plotting Cervical dilatation when admission is in active phase.

Look at Fig 1.3.2 in the section marked active phase there is an 'alert' line, a straight line from 3-10 cms. When a woman is admitted in the active phase the dilatation of the cervix is plotted on the alert line and the clock time written directly under the X in the space for time.

**If progress is satisfactory the plotting of cervical dilatation will remain on or the left of the alert line.**

### Observations to note on Fig. 1.3.2

Dilatation of the cervix was 4 cms – active phase.

Dilatation is plotted on the alert line at 4 cms.

The time of admission was 3.00 p.m.

At 5 p.m. dilatation was 10 cm.

Time in the first stage of labour in hospital was only 2 hours

## Example -2

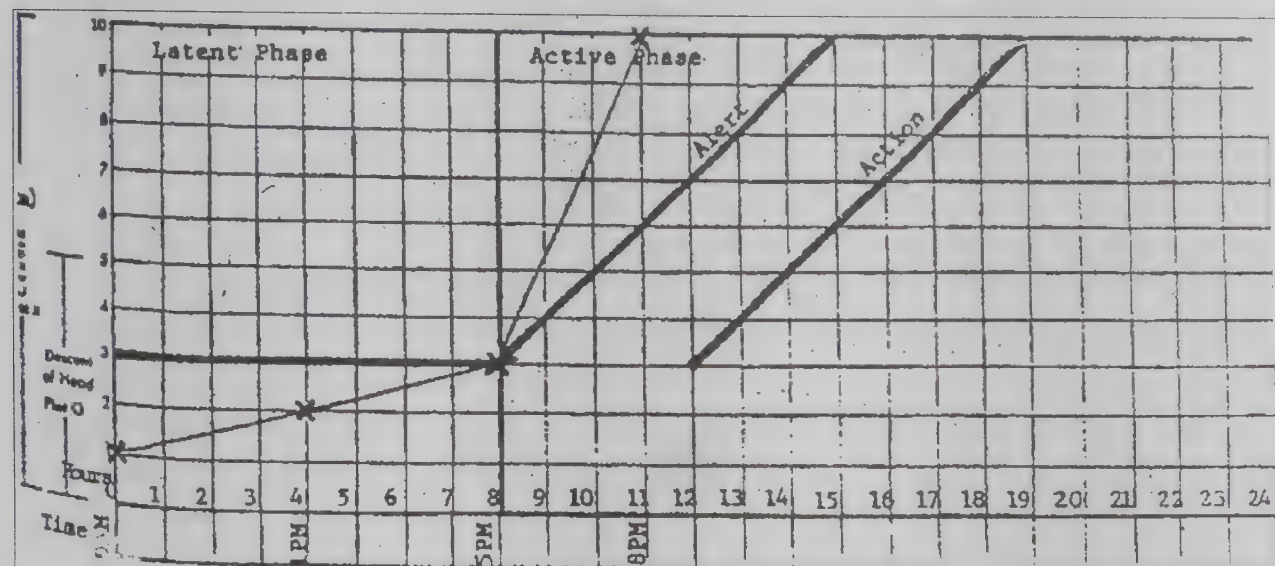


Fig 1.3.3 (Source: WHO/MCH/88.4).  
Plotting Cervical dilatation when admission is in latent phase

Look at Fig. 1.3.3 The latent phase normally should not take longer than 8 hours. When admission is in the latent phase dilatation of the cervix is plotted at zero time and vaginal examination made every 4 hours.

### Observation to note on Fig. 1.3.3

- Admission was at 9 a.m. and the cervix was 1 cm dilated
- At 1 p.m. the cervix was 2 cms dilated
- At 5 p.m. the cervix was 3 cms dilated when she entered the active phase of labour.
- At 8 p.m. the cervix was 10 cms (fully dilated).
- Latent phase lasted 8 hours and active phase lasted 3 hours.

### Example-3

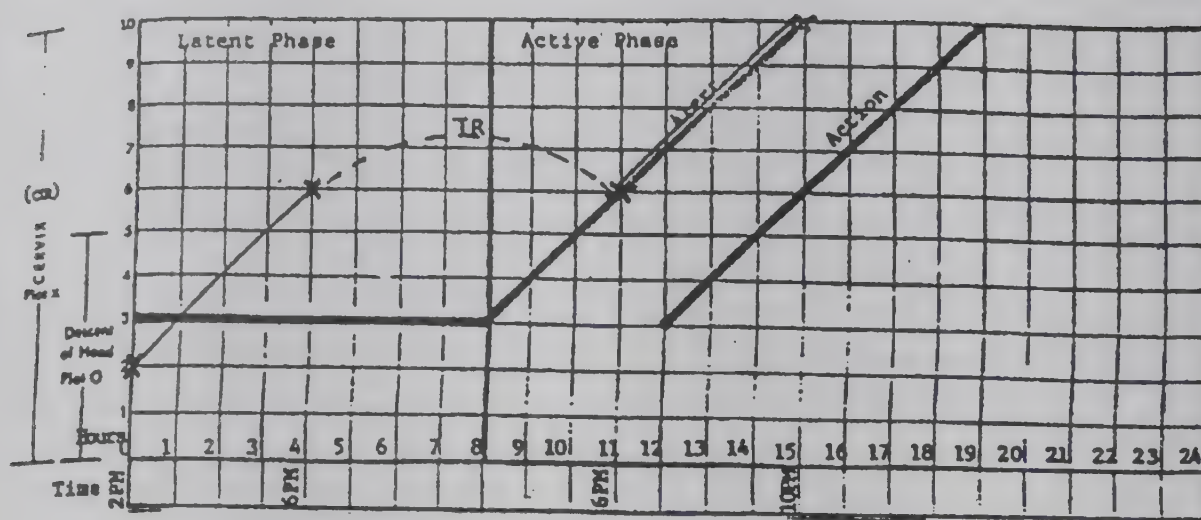


Fig. 1.3.4 (Source : WHO/MCH/88.4)  
Transfer from **Latent to Active** phase.

Plotting cervical dilatation when a woman is admitted in the latent phase and goes into the active phase in less than 8 hours.

When dilatation is 0-3 cms plotting must be in the latent phase area of the cervicograph. When labour goes into the active phase plotting must be transferred by a broken line to the alert line. You must plot the recordings of cervical dilatation and time 4 hours after admission, then transferred immediately to the alert line using the letter 'TR', leaving the area between the transferred recording blank. The broken transfer line is not part of the process of labour.

#### Observations to note on Fig 1.3.4.

- Admission time was 2 p.m. and the dilatation was 2 cms
- She had a total of 3 vaginal examinations.
- At 6 p.m. the dilatation was 6 cm – active phase.
- Time and dilatation were immediately transferred to the alert line.
- At 10 p.m. the cervix was 10 cms.
- The length of the first stage of labour in hospital was 8 hours.



### 1.3.5.2. Descent of the foetal head

You must remember that for labour to progress well, dilatation of the cervix should be accompanied by descent of the head. However, descent may not take place until the cervix has reached about 7 cms dilatation.

Descent of the head is measured by abdominal examination and expressed in fifths above the pelvic brim. It is found to be a more reliable way of gauging descent than a vaginal examination when large caput formation often leads the inexperienced to confuse scalp descent as opposed to skull descent. The following diagram illustrates the assessment of descent through the pelvic brim. (Fig. 1.3.5 )

5/5	4/5	3/5	2/5	1/5	0/5
COMPLETELY ABOVE	SINCIPUT HIGH OCCIPUT EASILY FELT	SINCIPUT EASILY FELT OCCIPUT FELT	SINCIPUT FELT OCCIPUT JUST FELT	SINCIPUT FELT OCCIPUT NOT FELT	NONE OF HEAD PALPABLE

Fig. 1.3.5. (Source: WHOIN1C1V 88.4)

The level of the foetal head measured by abdominal palpation and expressed in terms of fifths above the brim. S = sinciput, O = occiput

You must assess the descent of the head by abdominal examination immediately before doing a vaginal examination.

For convenience the width of the five fingers is a guide to the expression in fifths of the head above the brim. A head, which is mobile above the brim, will accommodate the full width of five fingers (closed).

As the head descends the portion of the head remaining above the brim, will be represented by fewer fingers (4/5th, 3/5<sup>th</sup> etc.).

It is generally accepted that the head is engaged when the portion above the brim is represented by 2 fingers width or less.

### Plotting of descent of the head

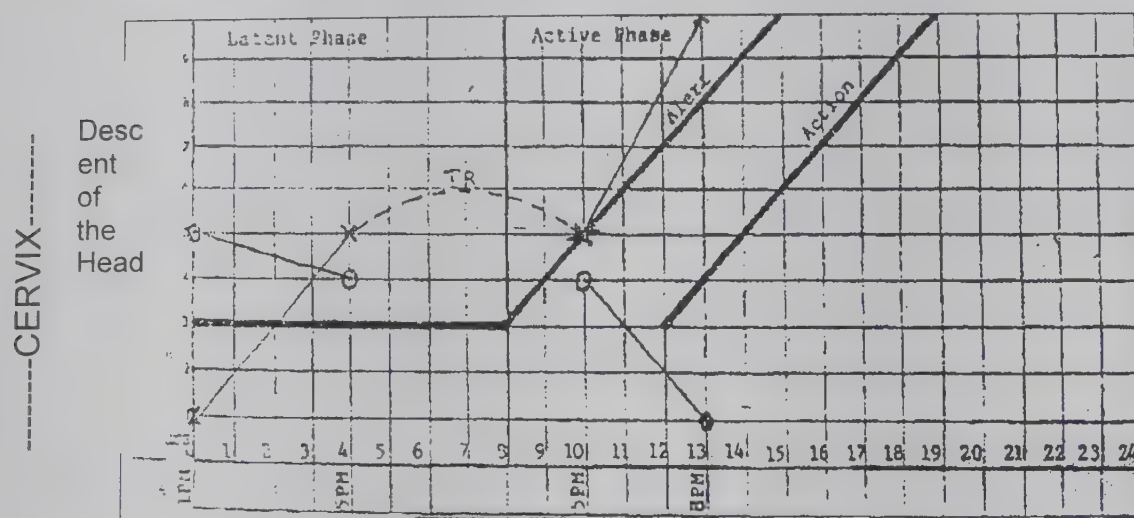


Fig 1.3.6 (Source WHO/MCH/88.4)

### Example- Fig. 1.3.6

On the left hand side of the graph is the word 'descent' with lines going from 5-0. Descent is plotted with an '0' on the cervicograph.

- On admission at 1 p.m. the head was 5/5ths above the pelvic brim and the cervix was 1 cm dilated.
- After 4 hours at 5 p.m. the head was 4/5ths above the brim and the cervix was 5 cms dilated.
- Labour is now in the active phase. Cervical dilatation, descent of head and time recordings are transferred to the alert line.
- After 3 hours the head was only 1/5<sup>th</sup> above the pelvic brim and the cervix was 10 cms dilated.
- The length of the first stage of labour observed in the unit was 7 hours.

### Key points

- Assessing descent of the head assists in detecting progress in labour.
- Descent is assessed abdominally in fifths felt above the pelvic brim
- Immediately before a vaginal examination an abdominal examination must always be done.

### 1.3.5.3. Uterine contractions

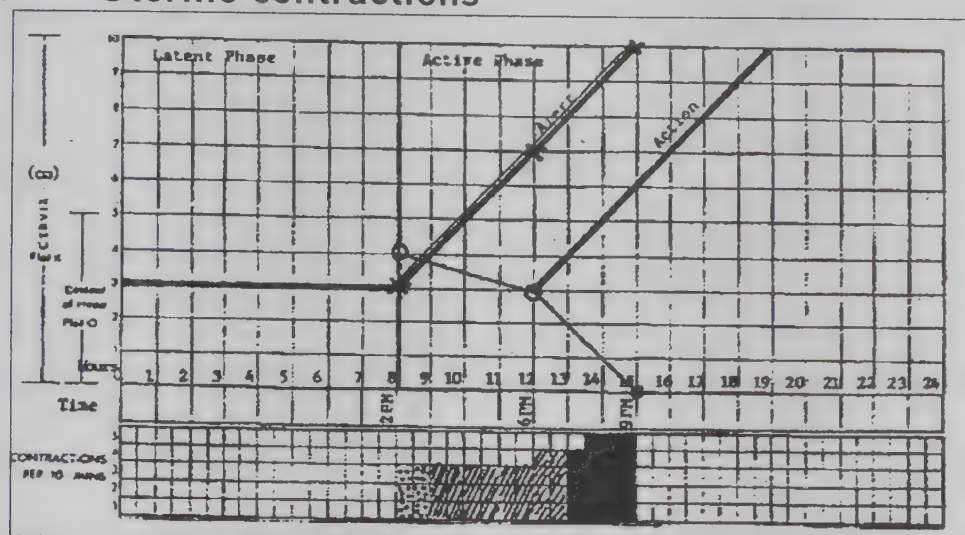
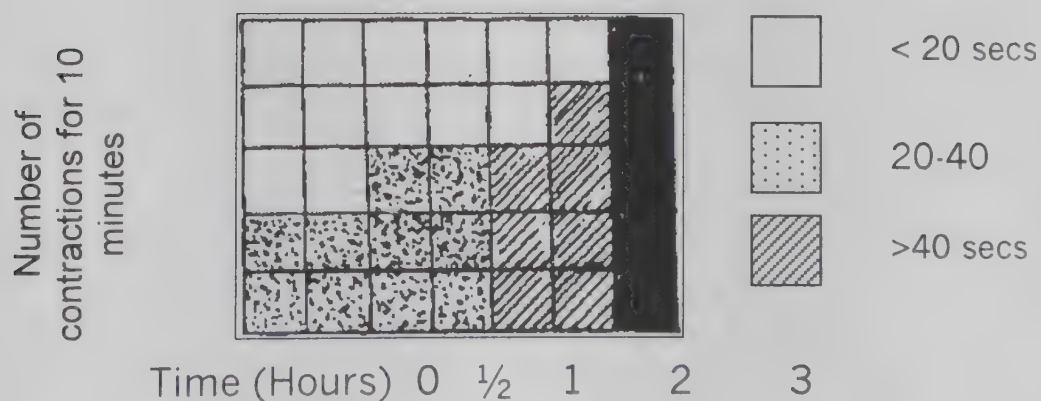


Fig. 1.3.7 (Source : WHO/MCH/88.4)



Shows the key to the three possible ways the duration of contractions can be shaded (Source : WHO/MCH/88.4).

In order for labour to progress well there must be good uterine contractions. In normal labour they usually become more frequent and last longer, as labour progresses.

- **Observing uterine contractions**

You must make observations on the contractions hourly in the latent phase of labour and half hourly in the active phase.

You must make the following two observations on the partogram:

- The frequency – how often are they felt?
- The duration – how long do they last?

You must assess the frequency of contractions by the number of contractions in a ten-minute period. The duration of the contractions is from the time, the contraction is first felt abdominally to the time when the contraction passes off measured in seconds.

Below the time line there is a blank of five squares going across the length of the graph and at the left hand side is written 'contractions per 10 minutes'.

Each square represents one contraction so that if 2 contractions are felt in 10 minutes two squares will be shaded (filled in).

First Half Hour	In the last ten minutes of that half hour there were two contractions lasting less than 20 seconds.
Third Half Hour	In the last ten minutes of that half hour there were three contractions lasting less than 20 seconds.
Sixth Half Hour	In the last ten minutes of that half hour there were four contractions lasting between 20 and 40 seconds.



Seventh Half-Hour: In the last ten minutes of that half hour there were five contractions lasting more than 40 seconds.

### **Observations on the Fig. 1.3.7**

- The woman was admitted at 2 p.m. in the active phase of labour.
- The cervix was 3 cms dilated, the head was 4/5 above the pelvic brim.
- Contractions – these were 3 in 10 minutes, each lasting less than 20 seconds.
- At 6 p.m. the cervix was 7 cm dilated, the head 3/5 above the pelvic brim and contractions were 4 in 10 minutes and were lasting between 20 and 40 seconds.
- At 9 p.m. the cervix was 10 cms, the head 0/5 above the pelvic brim and contractions were 5 in 10 minutes and were lasting over 40 seconds.

### **1.3.5.6 The Foetal condition:**

To assess the foetal condition you have to monitor the heart rate, see the colour and amount of liquor and detect moulding of the foetal skull.

#### **• Foetal heart rate**

Observing the foetal heart rate is a safe and reliable clinical way of knowing that the foetus is well. The best time to listen to the foetal heart is just after the contraction has passed its strongest phase. Listen to the foetal heart for 1 minute with the woman in the lateral position if possible.

The foetal heart rate is recorded at the top of the partograph Fig. 1.3.1. It is recorded half hourly and each square represents one half hour. The lines for 120 and 160 are darker to remind the recorder that these are the limits of the normal foetal heart rate.

If an abnormal heart rate is heard, listen every 15 minutes for at least 1 minute immediately after a contraction. If the heart rate remains abnormal over three observations action should be taken unless delivery is very close.

### Key points

- A rate  $> 160$  beats / min (tachycardia) and  $< 120$  / min (bradycardia) may indicate foetal distress.
- A heart beat that is 100 or lower indicates very severe distress and action should be taken at once.

### • Membranes and liquor

You can assess the foetal condition by seeing the colour of liquor.

There are four observations, which are recorded on the partograph immediately below the foetal heart rate recordings. They are:

- If the membranes are intact : Recorded as the letter 'I' for intact.
- If membranes are ruptured:
  - a) Liquor is clear : Recorded as the letter 'C' for clear
  - b) If the liquor is meconium stained : Record as the letter 'M' for meconium
  - c) The liquor is absent : Record as the letter 'A' for absent

Make the observations at each vaginal examination.

If there is thick meconium at any time or absent liquor at the time of membrane rupture listen to the foetal heart more frequently as these may be signs of foetal distress.

- **Moulding of the foetal skull bones**

Moulding is an important indication as to how adequate the pelvis is to accommodate the foetal head. Increasing moulding with the head high in the pelvis is an ominous sign of cephalo-pelvic disproportion.

Make recordings immediately beneath those of the state of liquor.

Key:

- 0 = Bones are separated and the sutures can be felt easily.
- + = Bones are just touching each other
- ++ = Bones are overlapping, but can be separated by pressure
- +++ = Bones are overlapping severely and cannot be separated despite pressure.

Moulding may be difficult to assess in the presence of a large caput, but that in itself should alert the attendant to possible cephalo-pelvic disproportion.

**Key points**

- Listen to the foetal heart immediately after the peak of a contraction with the woman in the lateral position.
- Recordings are made half hourly in the first stage of normal labour.
- Normal foetal heart rate is between 120-160 beats / minute.
- Increasing moulding with a high head is the sign of disproportion.

**1.3.5.7. The Maternal condition**

Enter all the recordings for the maternal condition are entered at the foot of the partograph below the recording of uterine contractions see Fig.1.3.1

- **Pulse, Blood Pressure and Temperature**

Pulse rate : half-hourly  
Blood pressure : 4 hourly or more frequently, if indicated  
Temperature : 4 hourly or more frequently, if indicated

- **Urine – Volume, Protein and Acetone**

See for protein in urine

Urine volume – encourage woman to pass urine 2-4 hourly and measure urine output.

- **Drugs and I/V fluids**

Chart these in the appropriate column under the contractions.

- **Oxytocin regime**

There is a separate column for oxytocin titration above the column for I/V fluids and drugs.

You must make all entries in relation to the time at which the observations are made.

To see a completed partograph of a normal first stage of labour look at Fig. 1.3.1

**Key points**

- Time of admission is zero time, when the woman comes in the latent phase of labour.
- When the active phase of labour begins all recordings are transferred, plotting the cervical dilatation on the alert line.
- When progress of labour is normal plotting of the cervical dilatation remains on the alert line or to the left of it.



### **1.3.6. Identification and management of foetal and maternal distress**

#### **1.3.6.1. Evidences of foetal distress in labour**

- Persistent tachycardia of above 160/min.
- Persistent bradycardia of below 120/min (late deceleration).
- Irregularity of foetal heart sound.
- Excessive foetal movements.
- Passages of meconium per vaginam in cephalic presentation.

If any of the signs do not improve despite management, labour has to be terminated either by LSCS if in first stage or by instrumental delivery hence refer to FRU.

#### **• Management:**

O<sub>2</sub> inhalation. To lie in left lateral position, injection Ringer lactate, shift to F.R.U.

#### **1.3.6.2. Evidences of maternal distress**

You must remember that the following are the signs of maternal distress:

- Increased pulse rate (above 100/min).
- Looks exhausted .
- Rise of temperature above 100.4°F.
- Dehydrated tongue.
- Appearance of protein and ketones in urine (for ketones do Rothera's test/Ketostix if available).

If any of the signs appear then start I.V 5% dextrose followed by I.V Ringer lactate infusion. Reassess the progress of labour and the type of uterine contractions and assess the foetal condition and manage accordingly.

### **1.3.7. Management of second stage of labour**

#### **1.3.7.1. Diagnosis of Second Stage:**

You must suspect 2<sup>nd</sup> stage of labour when

- Patient vomits or reports that she feels a need to defaecate.
- Membranes spontaneously rupture.
- The patient has an intense urge to bear down during contraction.

On pervaginal examination in the second stage of labour cervix is no longer palpable i.e. fully dilated.

#### **1.3.7.2. Conduct of Delivery:**

You should shift the patient to the delivery room when foetal head is seen at vulva in between contractions.

- Monitor FHR every five minutes. Presence of an assistant helps greatly.
- Bring the patient to the edge of the table – preferably in dorsal or semi-recumbent position.
- Wash perineal area with an antiseptic solution and use sterile drapes.
- When the head is crowning the perineum, make a decision as to the requirement of episiotomy or otherwise. Episiotomies are not routinely required nor should they be routinely avoided. It may be required in most nulliparous women. When episiotomy is required, give a local infiltration with 1% xylocaine along the line of planned episiotomy cut which is usually a mediolateral one. (See Episiotomy).

- If the episiotomy is made at the right time, almost with the next contraction and patient's bearing down effort, the head will deliver.
- Apply counteraction anteriorly to the vertex with one hand while a towel or a pad in the other hand supports the perineum to enable a controlled delivery of head rather than a sudden pop-out. Fig. 1.3.8
- Once the head is delivered, palpate the foetal neck to see any loop of cord unwrapped around it. If the loop is loose, slip it over the head posteriorly.

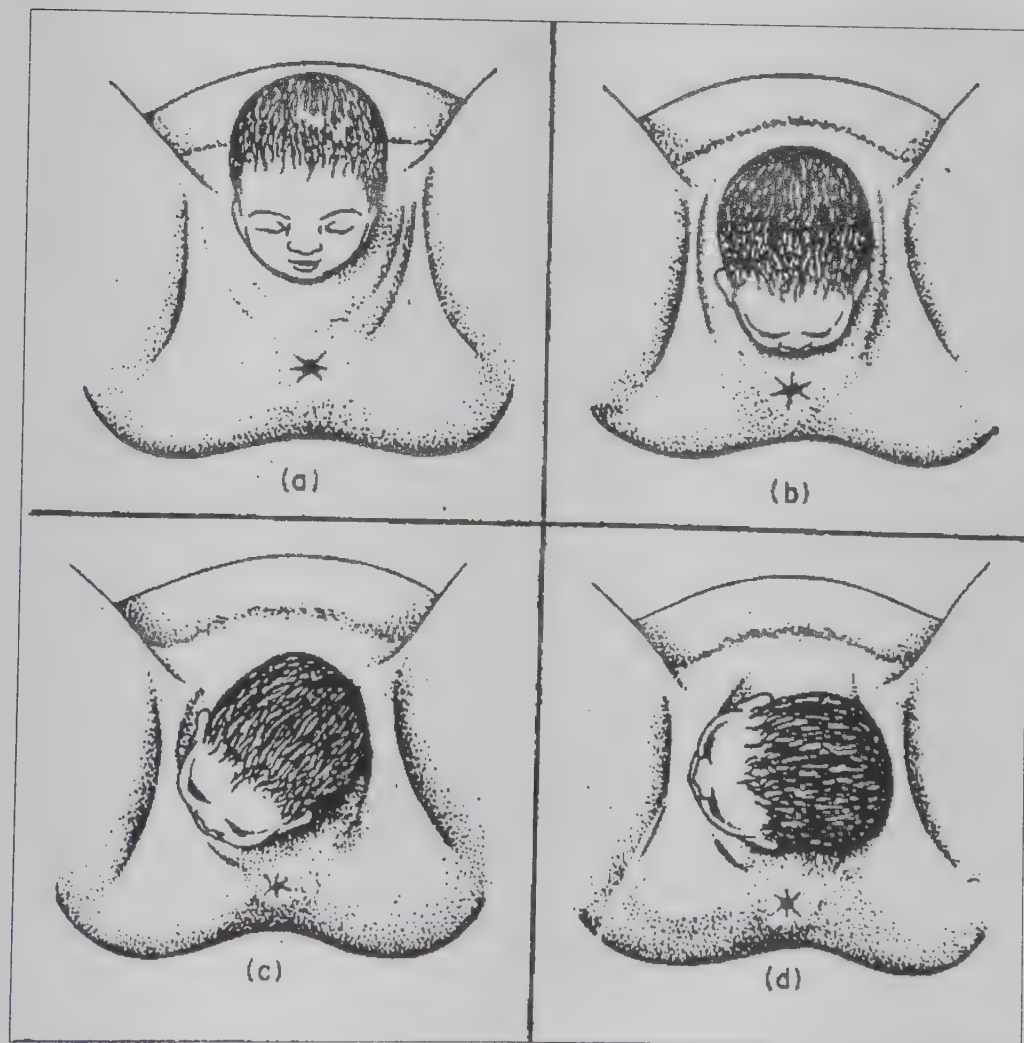
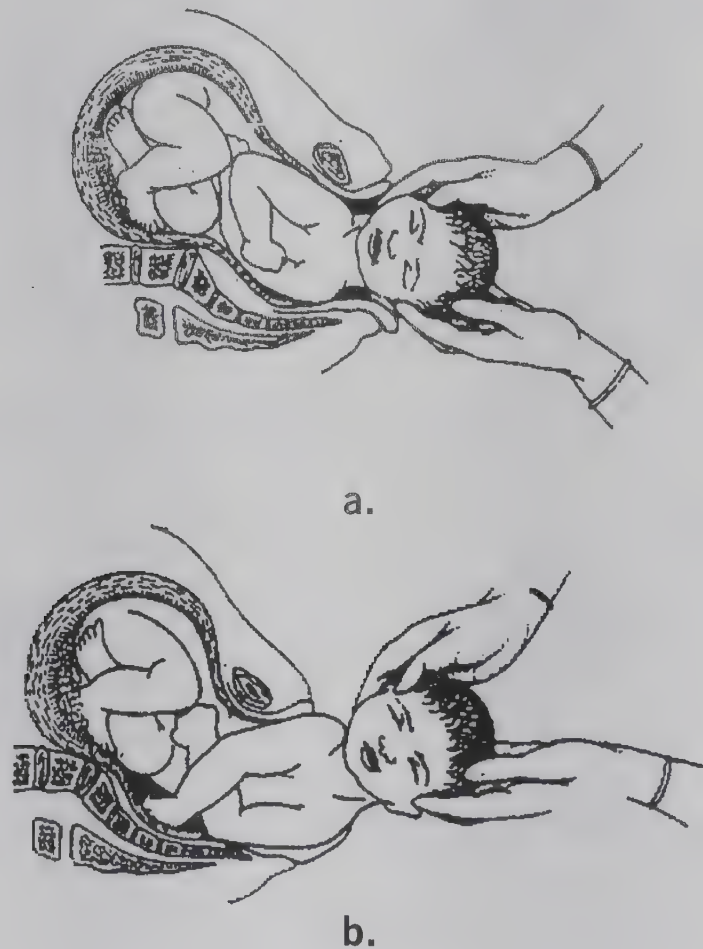


Fig 1.3.8 (a) Head is born by extension (b) Head drops down with the face close to the anus. (c) Restitution. (d) External rotation.  
But if it is tight, it is cut between two clamps.

- Clear the baby's mouth and oropharynx of mucous with a mucous sucker before the body delivers. Deliver the shoulders by depressing the head posteriorly so that lateral flexion of the body occurs. The rest of the baby automatically follows. Fig. 1.3.9
- At the delivery of anterior shoulder give I/V methergine 0.2 mg unless there is a contraindication to it.
- Cut the cord between clamps and hand over the baby to the paediatrician.
- Note the time of the birth of the baby.
- Give the baby to mother and let the baby start suckling.



**Fig. 1.3.9** Assisted delivery of the shoulders. a. Anterior shoulder  
b. Posterior shoulder



### **1.3.8. Management of third stage of labour**

Place the left hand on lower abdomen to detect the contraction of uterus. After delivery, uterus is at or just below the level of umbilicus. It also ensures early detection of blood collecting inside the uterus.

#### **1.3.8.1. Signs of placental separation**

To deliver the placenta, you must wait for signs of placental separation. These are:

- Uterus becomes hard and globular;
- Uterus rises just above umbilicus;
- Extra vulval lengthening of umbilical cord;
- A gush of blood frequently appears;
- On pushing the uterus up in the abdomen, the cord does not recede back.

You must deliver the placenta by controlled cord traction and countertraction of the uterine corpus. At any cost, cord traction should be avoided before the placenta is separated.

If methergine was not given at delivery of anterior shoulder, 0.25 mg intravenous/intramuscular can be given after the delivery of placenta.

Inspect the placenta for completeness. Feel the hard retracted uterus and if the vaginal bleeding is not excessive, proceed to inspect the vagina for evidence of any lacerations or tears.

Repair of tears and episiotomy is done on similar lines.

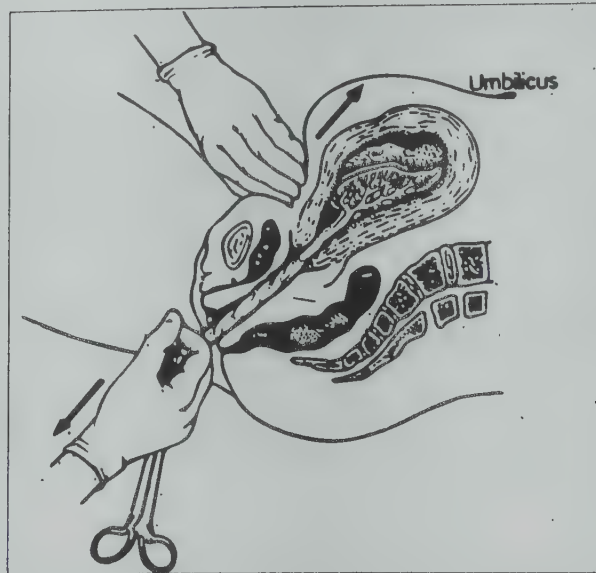


Fig. 1.3.10 Delivery of the placenta by controlled cord traction

### 1.3.9 Episiotomy

As you know that an episiotomy (perineotomy) is an incision into the perineum to enlarge the space at the outlet, thereby facilitating the birth of the child. A straight incision is easier and simpler to repair and heal better than jagged uncontrolled laceration. The structures in front are protected. Tears into them can be avoided and second stage of labour can be shortened.

#### 1.3.9.1. Indications for episiotomy

You must give episiotomy for the following indications:

- I. To preserve integrity of pelvic floor.
- II. Arrest of progress by a rigid perineum due to thick heavy muscle tissue, operative scars and previously well repaired episiotomy.
- III. To prevent uncontrolled perineal tears
- IV. To protect foetal head especially in premature babies, large babies, abnormal position and presentation such as breech and face.

#### 1.3.9.2. Timing of episiotomy

If you make to it late, the purpose of episiotomy is not served. If it is made too soon, it causes unnecessary loss of blood. It is made when perineum is bulging and head does not recede back in between contractions (i.e. crowning).

#### 1.3.9.3. Type of episiotomy

- I. Median
- II. Mediolateral
- III. Lateral

Medio-lateral episiotomy is made commonly. The advantage is, should an extension of episiotomy occur, the anal sphincter will be spared as can happen with median episiotomy. The disadvantage of lateral episiotomy is excessive bleeding.

#### 1.3.9.4. Procedure

As the head is crowning, give local infiltration anaesthesia to perineum as shown in Fig. 1.3.11.

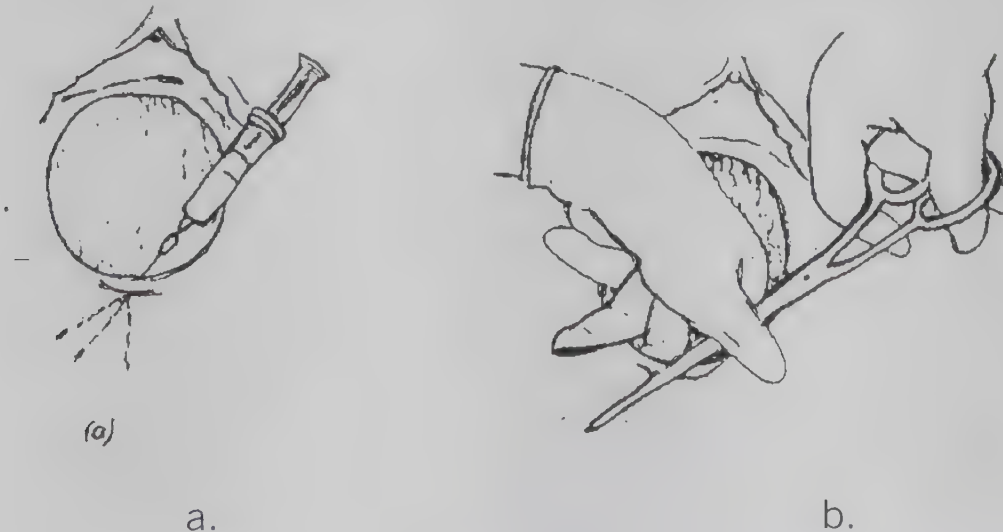


Fig. 1.3.11

Steps of mediolateral episiotomy- (a) Paramedian Infiltration (b) Cutting perineum (Source : WHO/MCH/88.4)

Incision is made from midline of posterior fourchette towards ischial tuberosity making an angle of  $15^{\circ}$  : Length is about 4 cms. It can be placed either on right or left, but most often done on patients right side.

Repair the episiotomy after delivery of placenta and membranes. The uterus is contracted and there is no excessive bleeding. Intra-uterine and intravaginal procedures are more difficult to perform once the episiotomy has been stitched.

Repair is done in 3 layers

Vaginal mucosa is stitched starting from the apex (tip of the incision). The first bite is taken just above the apex. '0' chromic catgut on a medium sized round body needle is used. Continuous stitching is done. Edges are just approximated and not strangulated.

Each bite includes vaginal mucosa and tissues between vagina and rectum. The repair is continued to the skin edges.

The second layer includes the muscles of the perineum. They are sutured with the same needle and catgut as for first layer. Interrupted sutures are given.

The third layer is closure of skin edges. Interrupted mattress sutures are passed through skin and subcutaneous tissue. Stitches are to be tied in such a way to avoid strangulation as swelling takes place following trauma.

#### **1.3.9.5. After care:**

Perineum is cleaned with warm water after each urination and bowel evacuation. The wound has to be kept dry as far as possible, hence change pads 4-6 times daily during the first 5-7 days.

While cleaning and drying the perineum start from the vaginal edge towards anus (before backwards).



### **1.3.10. Perineal Tears**

Many women suffer tears of perineum following child-birth:

You may have encountered the following types of perineal tears :

- First degree tear: The vaginal mucosa, the fourchette and skin of perineum are involved.
- Second degree tears are deeper. They are mainly in the midline and extend through perineal body. Besides vaginal mucosa and skin, the perineal muscles are torn.
- Third degree perineal tear extends through the perineal body, muscles and the anal sphincter and occasionally anterior rectal wall.

#### **1.3.10.1. Procedure**

- For first degree perineal tear, single chromic catgut suture is used in one layer.
- Second degree perineal tears are repaired similar to episiotomy.
- Third degree perineal tear is repaired
  - For 3<sup>rd</sup> degree tear repair, an atraumatic needle with 000 chromic catgut is required besides the other instruments, which are required for episiotomy repair.
  - The anterior wall of rectum is repaired with 000 chromic catgut on an atraumatic needle.
  - Starting at the apex, interrupted sutures are placed through the rectal wall with the knot tied in the lumen.
  - The second line of repair is done by bringing together the perirectal fascia and fascia of recto vaginal septum. Continuous 000 chromic catgut sutures are placed with atraumatic needle.

- Torn ends of the anal sphincter are identified, grasped with Allis forceps and approximated with interrupted sutures using atraumatic needle suture.
- Vaginal mucosa is approximated as in episiotomy.
- Perineal muscles are sutured together with interrupted stitches.
- Skin edges are stitched as in episiotomy.

### **1.3.10.2. After care**

For proper healing you must ensure that:

- General care (as in episiotomy),
- Additional care is as follows:
- Low residue diet for 3 days.
- Laxatives from third day to make the stool soft.
- By fourth-fifth day, the woman should have moved the bowel and the stool is soft.
- Avoid enema.

### **1.3.11. Equipment required for normal delivery in the labour room.**

Catheters: a. Simple catheters  
b. Self-retaining catheters

Enema apparatus

Sponge holding forceps

Scissors

Dissecting forceps

Needle : a. Round bodied  
b. Cutting

Needle-holder

Kocher's artery forceps

Sutures chromic catgut No1 on round body and cutting needle

Obstetric forceps

Kidney trays

Bowls

Rubber sheets

Sterilized rubber gloves  
Gowns and mask  
Thermometer  
Blood pressure apparatus  
Episiotomy tray  
Episiotomy scissors  
Small curved artery forceps-2  
Dissecting forceps-1  
Needle holder  
Sponge holding forceps-1  
For local infiltration - Xylocaine 1%  
10 ml syringe  
needle (hypodermic)  
Antiseptic solution  
Sterile drapes  
Cotton swabs

### **1.3.12.Early identification of abnormal progress of labour**

The partogram will help you to detect the following abnormalities so as to ensure timely management:

- 1.3.12.1. Prolonged Latent Phase
- 1.3.12.2. Moving to the right of the alert line
- 1.3.12.3. Moving to the action line
- 1.3.12.4. Abnormalities of the descent

### 1.3.12.1. Prolonged Latent Phase

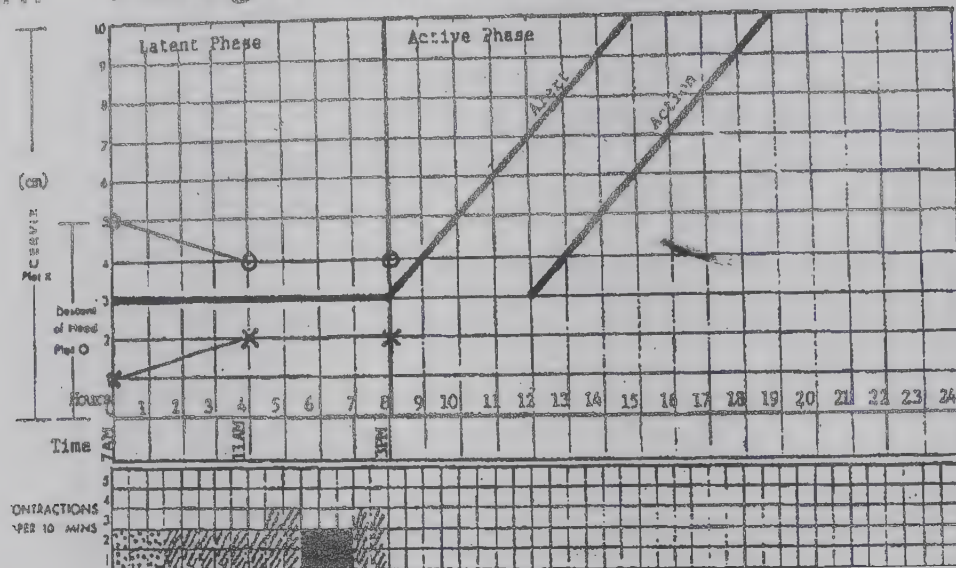


Fig. 1.3.12. (Source WHO/MCH/88.4)

If a woman is admitted in labour in the latent phase (less than 3 cms dilated) and remains in the latent phase for the next 8 hours, progress is abnormal and you must transfer her to a hospital for a decision about further action. This is why there is a heavy line drawn in partograph at end of 8 hours of the latent phase. See Fig. 1.3.12.

#### Example Fig. 1.3.12.

- On admission at 7.00 a.m. the head was 5/5ths above the pelvic brim and the cervix was 1 cm dilated. There were two contractions in 10 minutes lasting less than 20 seconds.
- After 4 hours at 11.00 a.m. the head was 4/5ths above the pelvic brim and the cervix was 2 cms dilated. In the last ten minutes of that half hour there were two contractions lasting between 20 and 40 seconds.
- Four hours later at 3.00 p.m the head was still 4/5ths above the pelvic brim and the cervix was still 2 cms dilated. Contractions were three in ten minutes lasting between 20 and 40 seconds.
- The length of the latent phase was 8 hours in the unit.



### 1.3.12.2. Moving to the Right of the Alert Line:

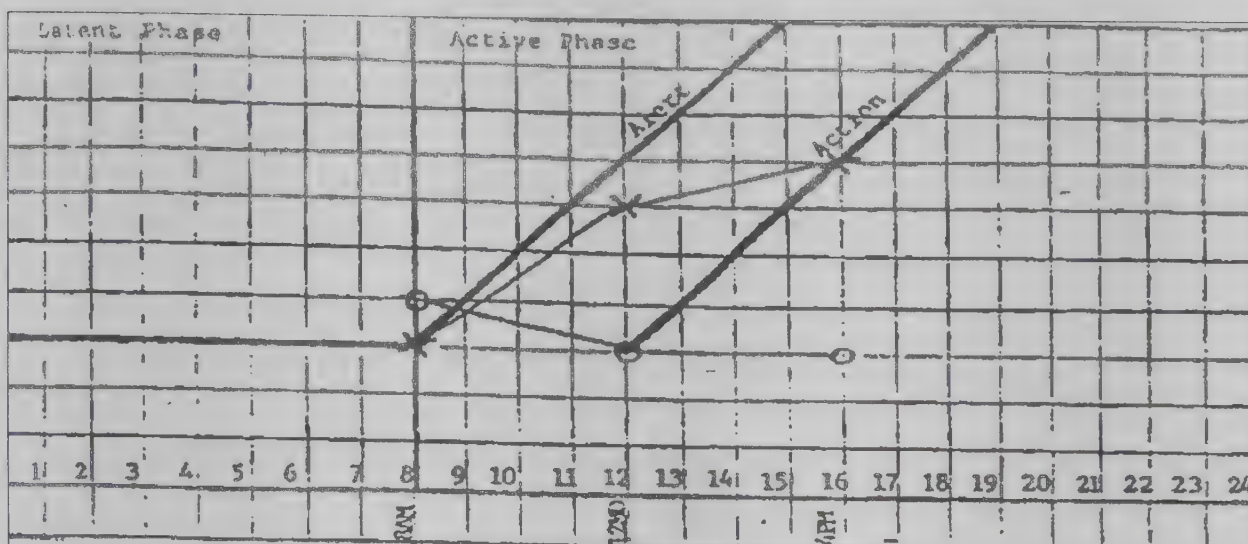


Fig. 1.3.13

(Source: WHO/MCH/88.4)

In the active phase of labour plotting of cervical dilatation will normally remain on, or to the left of the alert line. But some will cross to the right of the alert line and this warns that labour may be prolonged.

When the dilatation moves to the right of the alert line you must transfer the women to a hospital unless she is near delivery. By transferring her at this time, it allows time for the woman to be adequately assessed for appropriate intervention if she reaches the action line at the FRU.

### 1.3.12.3. Moving to the action line

The action line is 4 hours to the right of the alert line. If a woman's labour reaches this line, you must make a decision about the cause of the slow progress and appropriate action taken. Hence refer her to FRU where there are facilities for dealing with obstetric emergencies. You must refer the pregnant woman to the FRU before she reaches action live.

Look at Fig. 1.3.13 for an example of plotting of dilatation, which crosses the alert line, reaches the action line.

- At 8 a.m the cervix is 3 cms dilated on the alert line. The woman may remain in the health unit.
- At 12 midday the cervix is 6 cms dilated and the graph has crossed alert line. The woman must be transferred to an institution with facilities for obstetric interventions.
- At 4 p.m the cervix is 7 cms dilated and the graph is on the action line. A decision must be made on what action needs to be taken.

The shaded area between alert and action lines in the active phase and beyond 8 hours in the latent phase requires referral from a peripheral unit and/or extra vigilance at FRU. **See Fig. 1.3.14.**

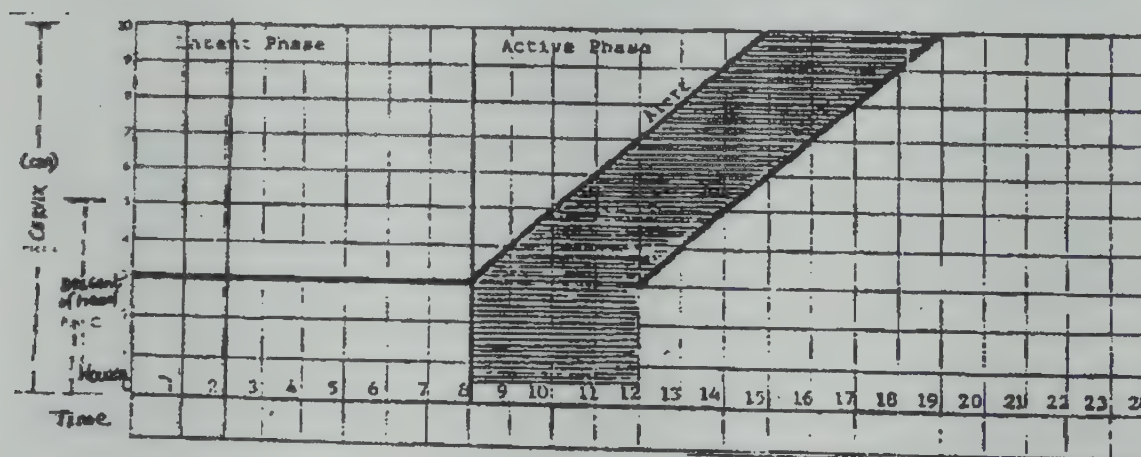


Fig. 1.3.14  
(Source WHO/MCH/88.4)

#### Key points

- All women whose cervicograph moves to the right of the alert line must be transferred and managed in an institution with adequate facilities for obstetric interventions, unless delivery is near.
- You must refer her to FRU before she reaches action line.
- At the action line the woman must be carefully re-assessed for the reason for lack of progress and a decision made on further management.

#### **1.3.12.4. Abnormalities of descent**

Once the cervix is fully dilated the rapid descent of the presenting part occurs resulting in delivery. However when the second stage of labour is prolonged you must exclude CPD. Abnormalities of descent may be:-

- Protracted descent: This is when the rate of descent is less than 1 cm/hr nulliparas and less than 2 cms/hr in multiparas. It is frequently preceded by other dysfunctional labour patterns.
- Arrest of descent: You should diagnose it when it has stopped entirely for at least one hour. It is preceded by protracted labour.

The evaluation of the foetal descent is complicated by the development of moulding and caput at the end of labour. For assessing the station of the presenting part accurately both abdominal and pelvic examinations are required.

#### **1.3.13. Management of abnormal progress of labour**

The following notes are intended as guidelines only. Whenever you detect complications or abnormality of labour you must take prompt action.

##### **1.3.13.1. When cervical dilatation moves to the right of the alert line Fig. 1.3.13**

In a health centre – the woman must be transferred to hospital immediately, unless the cervix is almost fully dilated.

**Note** : If the head remains high in spite of good uterine contractions the woman should be transferred to hospital even when dilatation of the cervix is satisfactory.

In hospital equipped for operative delivery – a careful reassessment of labour and a decision on further management is made.



### 1.3.13.2. When cervical dilatation reaches the action line

When the action line is reached you should augment labour by

#### A. The primigravida with inefficient uterine action

- Adequate hydration (chart in the column for I/V fluids on the partograph).
- Appropriate analgesia (chart in the column for drugs on the partograph).
- Refer to FRU

**Note :** If there is evidence of uterine hyperactivity and/or foetal distress, the oxytocin infusion should be reduced or stopped.

#### B. The multipara

You must ensure:

- Adequate hydration and analgesia as for the primigravida.
- If membranes have been ruptured for more than 12 hours and if delivery is not close, antibiotics should be administered.
- Refer to FRU.

**Foetal distress:** If you detect foetal distress then

- If on oxytocin infusion, stop the drip.
- Turn the woman on her left side.
- Do a vaginal examination to exclude cord presentation / prolapse and observe colour of liquor.
- Adequate hydration.
- Give oxygen, if available.
- A woman with evidence of foetal distress should be transferred to a facility equipped for obstetric intervention.



### **1.3.13.3. Prolonged latent phase**

If the latent phase is longer than 8 hours, then refer to FRU.

### **1.3.13.4. Abnormalities of Descent**

**Management:** Refer to FRU as soon as possible.

### **1.3.14. Malposition**

Malposition is occipito posterior position.

The occiput and the posterior fontanelle are in the posterior segment of the maternal pelvis near sacroilliac joint and the bregma is in anterior segment. The right occipito posterior is the commonest.

You must suspect occipito posterior position when you find

#### **A. Per abdomen**

- Longitudinal lie with cephalic presentation.
- Suprapubic flattening.
- Foetal limbs felt on both side of mid line in the ROP.  
(Right occipito posterior)
- Back is difficult to feel.
- Foetal head is not engaged.
- Foetal heart sounds heard in the flanks.

## **B. Per-vaginum**

- Sagittal suture is in the oblique diameter.
- Posterior fontanelle is in the posterior segment towards the sacroiliac joint.
- Anterior fontanelle is anterior, towards ileopectineal eminence and easily felt.

### **Key points**

- Patient may come with premature rupture of membranes.
- First stage of labour can be prolonged, which can be detected in partogram.
- Second stage may be prolonged due to non rotation. /incomplete rotation of head.
- Frequent bladder distension.
- Persistent severe backache.
- Premature bearing down.

## **Management**

- Early diagnosis.
- Strict vigilance with watchful expectancy for descent and anterior rotation of the occiput.
- Judicious and timely management according to partogram referral when there is delay.

## Malposition

Type	Signs	Mode of Delivery	
		Spontaneous	Assisted
Occipitoposterior	<p>P/A Flattening of suprapubic region, limbs of foetus in front and foetal back in the flank. Non-engagement of the head or delayed engagement</p> <p>P/V Both anterior and post fontanelle easily felt. Posterior fontanelle lies nearer the saciaoillaic joint &amp; sagittal sutures in the oblique diameter</p>	90%	Operative delivery 10% hence refer to FRU if the labour is prolonged

### 1.3.15. Malpresentations

Malpresentation which are diagnosed during pregnancy in the ante-natal clinics are referred to FRU for delivery. However you may encounter a situation where a women with abnormal presentation may report during labour. Such conditions can become emergencies. Transverse lie and brow presentation (extended head) must be referred to FRU when they are diagnosed during labour and even during second stage of labour. They cannot deliver vaginally.

The following conditions may have to be managed by you as there may not be adequate time for reaching the referral facility before delivery.

- 1.3.15.1. Unanticipated breech in second stage
- 1.3.15.2. Face presentation
- 1.3.15.3. Cord prolapse & cord presentation
- 1.3.15.4. Undiagnosed twins
- 1.3.15.5. Undiagnosed second of twins

### **1.3.15.1 Unanticipated breech in second stage**

This is the presentation of podalic extremity comprising of buttocks with lower limbs or knee or foot.

#### **You can diagnose this when on**

- Perabdominal examination you find
  - Fundal grip hard round ballotable head is felt.
  - Lateral grip : Foetal limbs, smooth back are felt on either side of midline.
  - Pelvic grip: Soft broad non-ballotable breech is felt.

Foetal heard sounds are heard at a higher level than cephalic presentation

- Pervaginum examination you find

Cervix is fully dilated, membranes absent, meconium on gloves present.

Breech can be differentiated from the head by softness, irregular feel absence of sutures, fontanelles. Foetal anus can be differentiated from the mouth by the absence of alveolar margins.

#### **Management**

- Patient to be referred to FRU if breech is high up and woman is in early labour.
- If she comes in late first stage or second stage conduct the delivery after explaining the prognosis.

#### **Breech in second stage of labour**

- As soon as the perineum starts to bulge and the anterior buttock shows at the vulval orifice, bring the patient to the edge of the table and in dorsal position.



- Add syntocinon 2 units in the drip to maintain uterine contractions and expedite the delivery. Any delay in the 2<sup>nd</sup> stage can cause cord compression and anoxia.
- Give episiotomy in primi and multigravida at the time when breech does not recede back between uterine contractions. This widens the outlet for an easy delivery of after coming head.
- The buttocks are born with the mother bearing down with each contraction. The legs may need to be hooked out gently if they are extended. The body slips through upto the umbilicus. Remember not to pull on the baby.
- Hold the baby by your left hand and a loop of the umbilical cord gently eased out on the side to avoid compression. Ensure that the back of the baby is facing you. From now on, the condition of the foetus can be gauged by recording the cord pulsations. The delivery of the rest of the body must be completed in 5 minutes, otherwise cord compression will cause asphyxia and stillbirth.
- The foetus is covered with a towel and held by femoropelvic grip with both the hands and body hanging to maintain the flexion of the foetal spine. At no stage should the baby be held by the abdomen, because the liver spleen, suprarenal glands and kidneys may sustain injury.
- Further bearing down brings the lower angle of the anterior scapula under the symphysis pubes. Look for the medial border of the scapula. If it is parallel to the spine, the arms are flexed. Now is the time to feel for the arms across the front of the chest, hook a finger in the bend of elbow and deliver them. The anterior arm is delivered first followed by the posterior arm, after gently lifting the baby forwards.
- Allow the baby to hang by its weight for one to two minutes. Take care that the baby does not touch any part of labour table. Be ready to hold the baby if head comes out suddenly.
- Suprapubic pressure by the assistant helps to maintain the head in flexed position.
- When the nape of the neck/hair line becomes visible, the suboccipital area occupies the subpubic region and this is time to deliver the head.
- Hold the baby's ankles by your right hand and keep the body taut. Swing the body towards the mother's abdomen. At the

same time, the assistant maintains suprapubic pressure. This brings successively the chin, face, forehead and lastly the occiput out of the introitus. The mouth of the baby can be cleared of mucus as the mouth is being delivered.

- This method of delivery of head is known as Burns-Marshall technique. Allow the baby to hang by its weight for one to two minutes, Gravity and bearing down assists the head to descend maintaining flexion. When the nape of neck is seen, hold the ankles of the baby. While exerting slight traction, keep the body taut swing towards mother's abdomen, deliver the head gradually.

### **1.3.15.2 Face presentation**

It is a rare presentation.

Occasionally a multigravida can report in late first or second stage of labour with face presentation.

You should suspect face presentation when on

- **Per abdomen examination you find**

- Head felt longitudinal lie good uterine contraction.
- In lower pole, occiput felt easily at a higher level than the sinciput.

- **Per vaginum examination you find**

- Foetal nose, alveolar margins may be felt. During contractions the face may be seen at vulva.

- **Management**

- If chin (mentum) is anterior she may be delivered in the PHC after making a liberal episiotomy like in normal labour. The oedema of the face subsides within a week.

- If chin is posterior then you must refer her to FRU as early as possible as she may develop obstructed labour.

### **1.3.15.3 Cord prolapse and cord presentation**

Cord presentation is diagnosed when it is found to lie beside or below the presenting part. If the membranes are still intact, the condition is called cord presentation. If the membranes have ruptured, it is called cord prolapse. Its incidence is less than 1 per cent.

- **Predisposing factors:**

Any condition that causes non-engagement of the head or abnormal presentation predisposes to cord prolapse. It is suspected in the presence of malpresentations, cephalopelvic disproportion and polyhydramnios. Other conditions, which favour its occurrence, are placenta previa and abnormally long cord.

- **You should diagnose cord prolapse when**

- You have seen the cord outside the vulva.
- You have felt the cord on vaginal examination. Since the foetal mortality is high once the cord has protruded through the introitus, early diagnosis is to be made in these predisposing conditions.

- **Management**

- When cord presentation is diagnosed, transfer to FRU without delay.
- Cord prolapse is an obstetric emergency to save the foetus and delivery must be effected as quickly as possible.
- Baby can survive only for 20-30 minutes after the cord prolapse and this short time will not permit transfer in the second stage. The sooner the baby is delivered after the cord prolapse, the better is the result. Delay of over 30 minutes increases the foetal mortality. As soon as the diagnosis is made, there is no point in



trying to replace the cord and indeed it should be handled as little as possible to avoid inducing arterial spasm.

- If cord prolapse occurs in first stage transfer to FRU immediately. Explain the prognosis to the relatives before transfer. Foetus may die during transfer. If it is alive LSCS is done at FRU.

#### **1.3.15.4. Undiagnosed twins:**

- **You must refer immediately if :**

- First baby is breech or transverse lie.
- Babies appear premature/small.
- She is in early labour and can be transported promptly. It may be wiser to send a voluntary donor along with the patient.
- In advanced labour with first baby presenting as vertex deliver her in your PHC, it may not be safe to transfer her to FRU as delivery can occur on the way and post partum haemorrhage may cause maternal morbidity and mortality.

- **How will you manage labour?**

- Start I/V glucose drip.
- Use sedation judiciously-babies are small and may be adversely affected by heavy sedation.
- It may be prudent to add two units of syntocinon to the IV drip. This will avoid uterine inertia and post-partum haemorrhage.
- Once the membranes rupture, repeat PV to see for cord prolapse.
- Arrange a donor.

- **Second stage of labour is managed as follows :**

- Make an episiotomy during crowning even if babies are small. This will prevent intracranial haemorrhage.
- Clamp the cord at 2 places properly cut the cord between the clamps.
- Resuscitate the baby



Do not give methergine

- **Delivery of second twin:**

After the first baby is delivered, remove your gloves and do an abdominal examination to check the lie of the second twin, and also check the foetal heart.

If the lie is longitudinal (vertex or breech).

- A vaginal examination can be done after 5-10 minutes (or immediately if membranes rupture).
- If membranes are intact, the presenting part can be fixed, and artificial rupture of membranes carried out.
- If contractions are not effective, 2 units oxytocin added to 500 ml. of normal saline in IV drip.
- Forceps (in vertex) can hasten delivery in the presence of vaginal bleeding, foetal distress or cord prolapse. Otherwise a normal vaginal or assisted breech delivery is conducted in the usual manner.
- You must give prophylactic methergin at the delivery of anterior shoulder of second baby in vertex presentation.

If the lie is oblique or transverse.

External version (cephalic or podalic) should be attempted. If external version succeeds then the ensuing longitudinal lie is managed as described in the previous paragraph.

If external version fails, immediately transfer to FRU.

After delivery of second twin clamp the cord promptly and hand over the baby.

- **Management of third stage.**

Add ten to twenty units of oxytocin to the intravenous infusion to prevent atonic post-partum hemorrhage.

Examination of the placenta helps to determine zygosity, and confirm the complete expulsion.

#### **1.3.15.5. Undiagnosed second twin**

The first baby has delivered normally and then the size of the uterus seems large as compared to the one of normal third stage. When this thing happens, you need to reassess the situation. Do a pelvic examination. You may be surprised to find a bag of membranes or parts of another baby. Remove your gloves and do an abdominal examination keeping undiagnosed twin in mind. Check the lie and foetal heart and manage as described earlier.

#### **1.3.16. Obstructed labour and threatening rupture**

The labour in which there is insurmountable mechanical obstruction in the genital tract preventing vaginal delivery results in obstructed labour. If you know the causes of obstructed labour you will be able to take timely action and refer the woman likely to develop obstructed labour to FRU.

- You must suspect obstructed labour when
  - Labour pains become severe
  - Frequent
  - Prolonged

This phase of painful period may be followed by sudden cessation of pains in case of ruptured uterus or secondary inertia. Labour becomes prolonged with secondary inertia.

- **On examination you will find**

- Increasing pulse rate
- Dehydration
- Rise of temperature
- Urine-acetone +ve
- Edema of vagina and vulva
- P/A examination

Lower segment is bulged, tender, outline of foetus becomes obscure, pathological Bandl's ring may be recognizable.

FHS may not be audible or may show bradycardia i.e., early obstruction and may become absent in late obstruction. Head still above brim.

- P/V examination

Excessive moulding of head, large caput formation, vulva oedematous, liquor with thick meconium, scanty dry vagina, abnormal presentations may be detected.

- **Treatment**

Good antenatal and intra-natal care has been able to eliminate obstructed labour.

Antenatal detection of factors causing obstructed labour and referral to FRU for delivery.

By monitoring labour on a partogram. Whenever there is deviation from normal in the progress of labour you should refer the patient to FRU.

- **Primary Management of obstructed labour**

- Stop syntocinon if already started.
- Oxygen inhalation left lateral position.
- Sedation.
- Catheterisation of bladder.
- Intravenous dextrose saline to be given.
- Antibiotics to be started.
- Referral to FRU for termination of labour and prevent rupture of uterus with a note of treatment given before referral.
- Refer with blood donors.

- **Threatened rupture:**

You will see all the clinical features of obstructed labour. Along with them there will be tenderness in the lower segment.

Management is referral to FRU after primary management as early as possible.

### **1.3.17.Rupture uterus**

This is the giving away of the gravid uterus. This is one of the most serious accidents occurring during labour. Early diagnosis is an important step to minimise mortality.

Suspicion of rupture of uterus is the only way to minimise maternal mortality and morbidity. History of prolonged labour with acute agonising, continuous labour pains followed by a sensation of something giving way, cessation of labour bleeding pervaginum, unsuccessful attempts at vaginal delivery by dai is suggestive of ruptured uterus. In majority of patients the foetus is dead at the time of diagnosis. Now it's the mother who is to be looked after to save her life.

- **The following signs are suggestive of rupture uterus.**

- Tachycardia
- Low B.P
- Acidosis
- Dry tongue
- Vulval oedema
- P/A foetal parts are felt superficially, uterine contour not well made out, contractions are not felt and tenderness in lower abdomen may be present.
- Distention of intestines.
- FHS not localised.
- P/V Bleeding present, cervix hanging loose, presenting part high up or not felt hard uterus may be felt, on one side, lower abdominal tenderness present.



- On catheterisation there may be blood stained urine.

- **Prevention**

- Same as for obstructed labour.
- Women with previous caesarean section to be delivered at FRU. Scar rupture is usually seen during labour.

Careful antenatal, intra-natal supervision to detect cases with CPD, mal-presentation, hydrocephalus, previous LSCS and early referral for appropriate cases.

- **Management**

- Treatment of shock
- Sedation
- IV drip
- Antibiotics

Refer to FRU with blood donors.

### **1.3.18. Post -partum haemorrhage**

You must be aware that post-partum hemorrhage

It is the blood loss in excess of 500-ml following birth of the baby or blood loss less than 500 ml with detrimental effects on the mother's condition.

It may be primary haemorrhage and secondary haemorrhage.

#### **1.3.18.1 Primary haemorrhage**

When bleeding occurs within 24 hours following the birth of the baby. You must think of primary haemorrhage.

To manage a case of primary haemorrhage you have to ascertain the cause of haemorrhage. You must remember that it could be due to a atony of the uterus, trauma to the genital tract or mixed. This you can find out if you know the predisposing factors of haemorrhage and the clinical features of atonic and traumatic haemorrhage.

- **Atonic**

When the uterus fails to contract and retract effectively to stop bleeding

If you know the pre-disposing factors of atonic uterus then you may be able to prevent it to a large extent. The predisposing factors are:

- grand multipara
- overdistension of the uterus
- malnutrition and anaemia
- antepartum hemorrhage
- prolonged labour
- oxytocin use
- malformation of the uterus
- uterine fibroid
- mismanaged third stage of labour

- **Traumatic when bleeding results from injury to genital tract bleeding may occur from**

- Episiotomy or extension of episiotomy incision
- Vaginal tear
- Cervical tear
- Vulval tear especially para-urethral tears
- Cervical tears extending unto the uterus

- **Mixed PPH**

When bleeding is due to combination of atonic and traumatic causes, blood coagulopathy as seen in

- Abruptio placentae
- Pre-eclampsia and eclampsia
- IUD
- Jaundice in pregnancy
- Thrombocytopenic purpura.

- **Clinical features**

You must have seen many women with post-partum haemorrhage. Some of the presentations are given below:

- Vaginal bleeding, either copious in gushes or a slow trickle.
- Rarely bleeding may be totally concealed resulting in haematomas.
- Effect on the patient depends upon the pre-delivery haemoglobin and the amount of blood loss.
- Rapid pulse and fall in BP if significant blood loss occurs and shock sets in. In addition she develops cold, clammy limbs, apprehensive look, air hunger, restlessness, disorientation.
- The uterus may be flabby, if atonic PPH is the cause.
- The uterus is well contracted where only traumatic PPH occurs.
- Sometimes both the features can be there.

**ATONIC PPH**

Bleeding occurs few minutes after delivery.

Blood comes out in gushes.

**TRAUMATIC PPH**

Bleeding occurs immediately after delivery.

Bright red blood in continuous trickle.

Bleeding is usually controlled by giving injection ergometrine or by giving bimanual massage.

Bleeding is not controlled by injection ergometrine.

Uterus feels flabby.

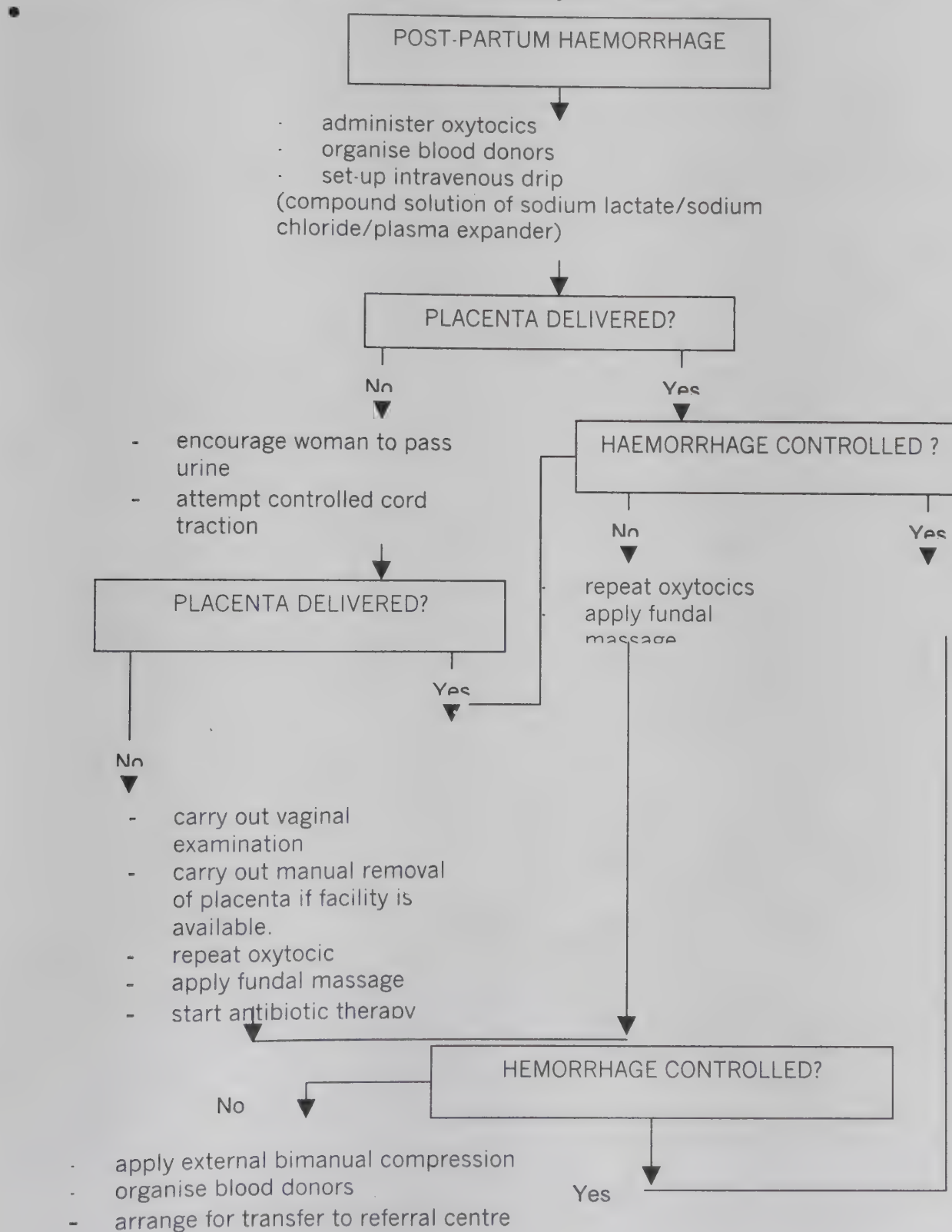
Uterus is well contracted.

- Injection Ergometrine 0.25 mg/Inj. Methergine 0.2 mg to be given intravenously.
- Start I.V drip with Ringer lactate, add 20 units of syntocinon to the drip.
- Oxygen by mask if hypoxia develops.
- Catheterise the bladder, if it is full.
- Give bimanual uterine massage if the cause is atonic.
- Explore the genital tract for perineal, vaginal, cervical tears, repair these immediately. For repair of perineal tears see Episiotomy 2.2.8. Cervical tears suturing should be sutured with atraumatic needle starting from apex of the tear. Application of sponge holding forceps on each edge of tear at its beginning will be useful for slight gentle traction. This will facilitate suturing beyond apex for perfect haemostasis.



## Management

This depends whether placenta is delivered or not. By following the steps outlined in the flow chart you will be able to manage the patient at your PHC.



- **Cervical injuries**

As you know there are of two types lateral cervical tear and bucket handle tear.

- Bucket handle tear of the cervix occurs where cervical stitch (MacDonald or Shirodkar) is not removed and labour has progressed. It bleeds severely. Cervical edge gets torn like a handle of a bucket. They have to be referred to FRU.

Lateral cervical tear (Unilateral or bilateral)

- To identify lateral tears of the cervix, apply one sponge holding forceps on the visible edge of the cervix as a marker.
- Now trace the edge of the cervix with another two sponge holding forceps alternately shifting the sponge holding forceps as you go around the cervix till whole circumference of the cervix is traced. Break in continuity indicates cervical injury.
- Once torn cervix is identified, catch other edge of torn cervix as shown in Fig.1.3.15 and see for the length of tear by locating the apex of the tear. Non-visibility of the apex of the tear suggests the extension of the tear more upwards. It is more serious and need laparotomy to see further extension and management.

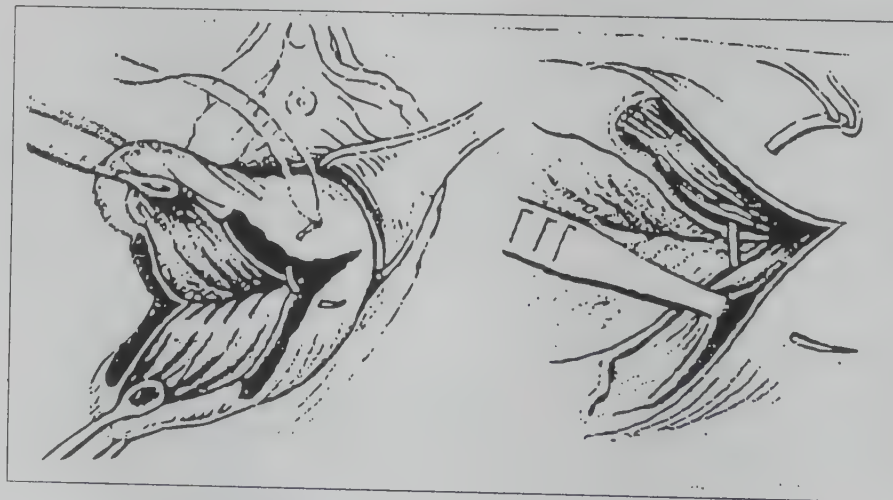


Fig. 1.3.15  
Repair of laceration of the cervix

- **Laceration of perineum, vagina and cervix:**

This needs suturing. Perineal injury, third degree tear or complete perineal tear needs skillful repairing to reconstruct the anal sphincter. Otherwise it will persist as morbidity and lead to incontinence of stool.

Paraurethral, submeatal and clitoral tears bleed heavily because of great vascularity. If these types of tears are present, place self retaining catheter in urethra and then suture continuously with fine catgut (3/0 or 4/0) on eyeless needle.

Vaginal tears may be at more than one place. You must suture by figure of 8 stitch or continuous locked stitch with chromic catgut and round body curved needle. You can pack vagina with roller gauze pack after suturing but remember to remove it after 6 hours.

Rupture uterus requires immediate laparotomy.

If bleeding is not controlled by all the above measures or the cervical tear is extending above to the uterus then patient should be immediately referred to FRU for further management like blood transfusion and exploration under anaesthesia without any delay.

- **Prevention of PPH (Primary)**

You must:

- improve Hb of the patient ante-natally so that she can withstand the blood loss.
- screen high risk patients and sent to equipped hospital e.g twin, hydramnios, grand multipara, APH etc.
- avoid kneading or fiddling of the uterus and pulling of the cord during third stage.
- examine placenta and membranes continue to detect any missing cotyledons.
- in induced or augmented labour by oxytocin, the infusion for at least one hour after the delivery and prophylactic

ergometrine should be given with the delivery of the anterior shoulder.

- exploring the uterus and examination of cervix and vagina for evidence of trauma following difficult labour or instrumental delivery should be routinely practiced.
- observe the patient for about 2 hours after delivery before shifting to the ward.
- put the child to breast soon after delivery.

### **1.3.18.2 Secondary post- partum haemorrhage**

This usually occurs after 24 hours within 42 days of the delivery.

Secondary post-partum haemorrhage is caused by

- retained bits of placenta
- infection
- inversion of uterus
- placental polyp

#### **• Management**

- May need referral to FRU if blood loss is excessive and for exploration under anaesthesia.
- Injection methergin 0.2 mg IM, 8 hourly for 24 hours followed by tab. methergine 1 tablet twice per day x 3 days.
- Antibiotics.
- Bed rest.
- Definitive treatment of the cause.

### **1.3.19. Retained Placenta**

You have already learnt about the diagnosis of atonic uterus and retained placenta. For managing this situation encourage woman to pass urine or do catheterization. For separated but retained placenta, placenta can be delivered by Brandt-Andrews method.



- Brandt-Andrews method: You can be sure whether placenta is separated or not by its descent into the open cervix or upper vagina by holding the clamp on the cord in one hand and gently pushing the uterus up towards the diaphragm by keeping the other hand over the lower segment on abdomen in suprapubic region. If slight tension is felt in the cord, repeat the procedure gently several times. Placenta will come in lower vagina and will deliver out. If the procedure causes increased tension in the cord, it suggests closed cervix or lack of placental separation.
- Inspect the placenta for its completeness. After delivery of the placenta, uterus should be stimulated to contract. This can be done by fundal massage, bimanual compression of the uterus, intravenous or intramuscular oxytocin, or intravenous infusion of normal saline with oxytocin (40 units in 1000 ml at a rate of 40 drops per minute).
- If Brandt-Andrews techniques have failed, or cord has broken or if part of placenta is retained, do gentle vaginal examination. If placenta or its part is felt, after steadying the uterus with the other hand on the abdomen, grasp the placenta and remove it slowly.
- If previous methods fail to deliver placenta, do manual removal of the placenta, if the woman is bleeding profusely. It should be performed under anaesthesia or intravenous analgesics and/or sedatives. Aseptic precautions should be observed strictly. Put one hand on abdominal wall and steady the uterus and the other hand is introduced into the vagina and passed into the uterus along the umbilical cord. Once the placenta is reached and its margin is located, insinuate the ulnar border of the hand between margin of the placenta and uterine wall. Gradually with back of hand in contact with the uterine wall, placenta is peeled off its uterine attachment by a motion similar to that employed in separating leaves of a book. In other words fingers are alternatively abducted, adducted and advanced until the placenta is completely detached. After complete separation, placenta should be grasped with the entire hand and slowly delivered out.

Membranes should be delivered at the same time using the sponge holding forceps.

Oxytocin drip and injection methergin should be given.

Antibiotic cover is necessary.

- If the woman is not bleeding profusely then she should be refer to FRU as the placenta may be unusually adherent to the implantation site. This is known as placenta accreta. Placenta accreta may be partial or complete.
- In partial adherent placenta, there may be retained cotyledon or excessive bleeding if placenta is pulled and adherent cotyledon gets irregularly torn. If placenta does not separate spontaneously, attempts to deliver may lead to more bleeding.
- In completely adherent placenta, there are no signs of separation of bleeding. Diagnosis is made when manual removal of placenta is tried and no plain of cleavage is found. Attempts to separate the placenta in the wrong plain may lead to severe bleeding.
- Hence manual removal of placenta should be done only where there is facility for blood transfusion and hysterectomy if required.

### **1.3.20. Shock**

Shock is a state of collapse of blood circulation resulting in critical reduction of tissue perfusion.

You will encounter the following types of shock:

- 1.3.20.1. Haemorrhagic
- 1.3.20.2. Non-haemorrhagic

#### **1.3.20.1. Haemorrhagic Shock:**

Bleeding is the commonest case of shock. Haemorrhage is possible at any period of pregnancy, during labour and puerperium.

This causes hypovolaemia. Causes of haemorrhage and its management are described earlier.

### **1.3.20.2. Non-haemorrhagic Shock**

A small number of women have post partum collapse after delivery without haemorrhage. The causes are:

- inversion of uterus.
- retained placenta without bleeding.
- prolonged labour leads to acidosis, infection and traumatic/operative delivery these may predispose to shock.
- amniotic fluid embolism and hypofibrinogenemia.
- pulmonary embolism.

#### **Clinical features:**

- Clinically, patient may have sweating, feeling of restlessness, tachycardia, low volume pulse, low blood pressure, subnormal temperature, and oliguria.

#### **• Management:**

- Inj. Morphine sulphate 15 mg IM to relieve pain.
- Continuous oxygen inhalation.
- Ensure patent airway.
- Foot end of the bed is raised.
- Fluid therapy-Rapid infusion of glucose saline to restore blood volume. Steroid hormones-Inj. Hydrocortisone (500-1000 mg) is useful in all types of shock.
- You must do monitoring of the patient by recording her pulse rate, B.P, respiration, general condition and amount of urination. Increase in B.P. and pulse rate returning to normal are signs of improvement.  
Refer to FRU for further management.

### **1.3.21. Acute inversion of the uterus**

It is the turning inside out of uterus:

- **You must suspect acute inversion of the uterus when there is**
  - Extreme shock which is out of proportion to haemorrhage
  - Evidence of shock

On examination you will find that:

Per abdomen-Uterus is not felt

Per vaginal - On bimanual examination cervix is felt all around through the cervical canal, protrusion of fundus is felt inside the vagina. Uterus is not felt.

- **Prophylaxis:**

Fundal pressure to expel the placenta and pulling on the cord should not be done till placenta is separated.

- **Management of shock**

- As in non-haemorrhagic shock
- IV fluids to be given
- Refer to FRU

### **1.3.22. Pulmonary embolism by air, amniotic fluid or meconium**

Pulmonary embolism is one of the major causes of maternal death, specially in the intra-natal and the post-natal period.

While deep venous thrombosis in the leg or in the pelvis is most likely the cause of pulmonary embolism, but in about 80-90%



of cases, it occurs without any previous clinical manifestations of deep vein thrombosis.

- You must suspect pulmonary embolism when there is history of
  - Sudden collapse
  - Acute chest pain
  - Air hunger
  - Pleural pain
  - Hemoptysis
- On examination you will find :
  - Cyanosis
  - Increased respiration rate
  - Distension of jugular veins
  - Pleural rub
  - Death usually occurs within short time from shock and vagal inhibition.
  - Preventive measures are same as outlined in phlebothrombosis.
- Active treatment comprises of :
  - Propped up position
  - O<sub>2</sub> inhalation
  - Sedation
  - Lasix-40 mg I.V
  - Maintenance of I.V. line (fluid should not be rushed in )

### **1.3.23. Self-assessment questions**

5. List the signs of onset of labour.
6. What are the pre-disposing factors of PPH ?
7. What are signs of separation of placenta?

## **1.4. POST-NATAL CARE**

### **LEARNING OBJECTIVES:**

At the end of this sub-unit, you should be able to: -

- manage normal puerperium.
- advise for breast feeding and related problems if any and give proper advice for any related problems.
- to diagnose puerperal complications and manage them.
- give health education regarding postnatal care both of mother and baby.
- counsel for contraception.
- identify and manage complications of puerperium.

### **CONTENTS:**

- 1.4.1 Introduction
- 1.4.2 Examination of post-natal women
- 1.4.3 Advice for breast-feeding and solving related problem
- 1.4.4 Management of normal puerperium
- 1.4.5 Diagnosis and management of minor ailments of puerperium
- 1.4.6 Health education regarding post-natal care
- 1.4.7 Advice regarding contraception
- 1.4.8 Detection of puerperal pyrexia and management
- 1.4.9 Detection of puerperal sepsis and management
- 1.4.10 Diagnosis and management of urinary tract infection
- 1.4.11 Detection and management of breast complications
- 1.4.12 Detection and management of puerperal venous thrombosis
- 1.4.13 Detection and management of puerperal psychosis
- 1.4.14 Self assessment questions

#### **1.4.1 Introduction**

The post-natal period or puerperium begins after the third stage of labour and includes the first six weeks after

delivery. During this time the woman's reproductive organs gradually return to their normal size and shape. There are many good opportunities during the puerperium for you to teach new mothers how to take care of themselves properly and their babies so that the health of both is maintained.

#### **1.4.2 Examination of post-natal woman**

You should advise her at least two post-natal check-ups

- First within 10 days of delivery
- Second at 6 weeks of delivery

First health check-up within first 10 days includes

- History about delivery, bowel and bladder functions, sleep, lactation and any ailment.
- Examination specially for fever, anemia, breast, uterus and lochia.

#### **General examination:**

Note her pulse, temperature, BP, pallor on examination.

#### **Local examination :**

- Note the uterus size and see for involution of uterus which is as follows: Immediately after delivery the fundal height of uterus is 20 weeks of pregnancy. During the first 24 hours it remains the same and then it comes just below umbilicus at the rate of 1 inch per day during first 2-3 days and then  $\frac{1}{2}$  inch per day. By about 7-10 days it descends beneath pubic symphysis and enters the pelvic cavity. Within 6 weeks it regains its original size.
- Note the smell and colour of lochia look at the pad if periphery of blood stain is darker than the centre, suspect infection.
- Examine the episiotomy – for healing process.
- Detection of risks of abnormal puerperium at earlier stage. Any sign suggestive of sepsis e.g fever, tachycardia, breast

complaints, pain in abdomen, fullness of abdomen, foul smelling discharge, tender uterus, subinvolution should be taken note of. Relevant detailed history should be asked and necessary investigation carried out.

## **Second Postnatal Check-up**

You should do the second post-natal check-up at the end of 6 weeks to know about:-

- Involution of uterus.
- Assessment of haemoglobin.
- Screening for fitness for contraception.

General systemic and local examination and Hb estimation will ensure that the woman is normal.

### **1.4.3. Advice for breast-feeding and solving related problems**

Refer to block on Child Health.

### **1.4.4. Management of normal puerperium**

- You must do close observation for first hour after child birth and insist that she should take 2-3 hours rest.
- You should tell her:
  - early ambulation is preferred but strenuous activities are to be avoided and to maintain personal and perineal hygiene.
  - she should have light diet on the first day. Subsequently she can have normal diet but it should have three hundred calories more than non-lactating woman. Diet should be rich in roughage so that she is not constipated.
  - she should be encouraged to pass urine frequently. At least 4-6 hourly.



- perineal stitches need proper care. They should be cleaned daily. Swabbing should be from above downwards and the vulva should be kept as dry as possible.
- stitch area should be cleaned dressed with antiseptic powder and covered with sterile pad daily.
- she must change her diapers or pads frequently
- she should must wash her hands each time after passing urine or stool.
- she should change her clothes, if possible daily and wear washed set of clothes after bath.
- she should be sure to wash her hands each time before feeding her baby.
- she should avoid visitors because of risk of acquiring some infection.

You should inform the woman, family and community that if there is fever breast engorgement, pain abdomen, infected lochial discharge, painful urination or any pain in chest or legs she should immediately contact you.

- IFA tablets for at least six months post-partum to be given.
- Abstinence for 6 weeks.
- Contraceptive advise after 6 weeks (see unit on contraception)
- Breast-feeding is best for the child.
- To take extra food when she is continuing lactation by adding extra milk, jaggery, green vegetable, chappatis, rice and pulse so as to increase the caloric intake 550 Kcal.
- Child care (as per block on child health).

#### **1.4.5. Diagnosis and management of minor ailments of puerperium**

- **After Pain**

This is the infrequent low abdominal colicky pain felt after delivery more so during the breast-feeding for 2-4 days.

It is due to uterine contractions to expel blood clots and due to oxytocin secretion during lactation.

Treatment -        Reassurance  
                         Mild analgesic

- **Retention of Urine**

Hot/Cold water application on the suprapubic region, sound of running water may help to initiate micturition.

Ask the patient to pass urine in squatting position. Catheterisation should be the last resort.

- **Pain**

At the site of episiotomy which may be due to tightly applied stitches in the skin. Tab. Ibuprofen 400 mg. 8hrly x 3-4 days will help in reducing pain at the stitch site.

### **Engorgement of breasts**

Hot water fomentation and light massage from periphery towards nipple help in removing engorgement with free flow milk, 5 units of syntocinon intramuscularly may be given followed by manual expression of milk.

#### **1.4.6 Health education regarding post-natal care**

- IFA tablets for at least six months post-partum to be given.
- Abstinence for 6 weeks.
- Contraceptive advise after 6 weeks (see unit on contraception).
- Breast-feeding is best for the child.
- To take extra food when she is continuing lactation by adding extra milk, jaggery, green vegetables, chappatis, rice and pulse so as to increase the caloric intake by about 550 Kcal.
- Child care (as per child health module).

### **1.4.7 Advice regarding contraception**

You should tell her about correct use of Family Planning Methods (See Unit 2)

### **1.4.8 Detection of puerperal pyrexia and management**

Puerperal Pyrexia is considered as any febrile condition occurring in a woman when temperature rises to 100.4 ° F or more within 14 days after confinement or if the temperture is more than 100<sup>0</sup> F on two occasion six hours apart after 24 hours of delivery.

The common causes are:

1. Puerperal sepsis
2. U.T.I
3. Breást engorgement and infection
4. Intercurrent infection
5. Deep venous thrombosis of leg

By history, examination and investigation you will be able to find the cause and manage accordingly. Detailed history should be taken for type of delivery, place of delivery and person who conducted the delivery. You should look for presence of any predisposing factor. General and systemic local examination should be done to confirm diagnosis and locate the source of infection.

**Investigations:** You must do the following investigation:

Haemoglobin, TLC,DLC  
Urine for pus cells

- **Management:**

Prophylactic

You must be aware that puerperal sepsis is at present an important cause of maternal morbidity and maternal mortality;

hence you must carry out prophylaxis with all earnestness. The principle of five cleans must be observed throughout the three clinical periods viz. (1) ante-partum, (2) intra-partum and (3) post-partum.

- **Ante-partum period:**

You must:

- endeavour to improve the health and nutrition of the mother and to treat anaemia, if present.
- Advise her to avoid sexual intercourse during the last 6 weeks of pregnancy as males harbor Streptococci beneath the prepuce.
- tell her care should be taken about personal hygiene; daily bath with daily change of clean clothes.
- tell her she should avoid contact with any infected member.
- tell her that any focus of infection if present should be treated properly.

- **Intra-partum period:**

- Principles of five clean to be observed.
- Unnecessary vaginal examination and routine bladder catheterization are to be avoided.
- Any injury to the birth canal should be properly repaired under strict aseptic precaution.
- Give prophylactic antibiotic in high-risk cases such as premature rupture of membranes.

- **Post-partum period :** Measures are the following :

- You must advise them not to have too many visitors.
- Advise the mother about personal hygiene.
- Women having puerperal pyrexia must be isolated from the lying-in-ward.



- Likewise, infant developing septic spots should be isolated along with mother.

- **Treatment**

- bed rest with head end raised to facilitate uterine discharge.
- plenty of fluids orally in mild cases and intravenously in severe forms.
- advise her to take light diet if infection is mild.
- advise her appropriate antibiotics depending upon culture sensitivity report if available. Mild cases respond to broad spectrum antibiotics e.g. Ampicillin 500 mg 6 hourly and Metronidazole 400 mg 8 hourly.
- methergin to promote involution of uterus.

Severe cases are to be referred to FRU

#### **1.4.9 Detection of puerperal sepsis and management**

You must be aware that this is the infection of the genital tract after childbirth or abortion.

Infection of the genital tract occurring at any time between the onset of rupture of membranes or labour and the 6 weeks in which two or more of the following are present:

- Fever with malaise i.e., oral temperature 38.5° C or 101.3 ° F or higher on any occasion.
- Abnormal vaginal discharge e.g. foul smelling lochia.
- Pelvic pain.
- Delay in the rate of reduction in size of the uterus ( <2 cm/day during first 8 days).

- **Clinical features**

The woman will have the following symptoms:

- Fever – In severe infections immediately after delivery within 24 hours. In mild cases on 3<sup>rd</sup> or 4<sup>th</sup> day within the first week.
- Pain in lower abdomen.
- Vomiting, headache.

- **Signs**

You will note the following signs: -

- Rise of temperature at 101-102 ° F.
- Flushed face.
- Tachycardia.
- Abdominal examination shows delay in the rate of involution of uterus (less than 2 cms/day during first 8 days). Tenderness and guarding is there when there is pelvic peritonitis.
- Speculum examination shows scanty or profuse lochia which is foul smelling.
- Vaginal examination shows tender parametrium and uterus.

- **On investigation you will find:**

- TLC high
- Polymorphs high
- Haemoglobin low
- (Vaginal discharge to be sent for culture and sensitivity if available)

- **Treatment**

You must give the following treatment:

- Bed rest.
- Plenty of fluids by mouth.

- Hydrotherapy in hyperpyrexia and anti pyretics.
- Antibiotics to cover aerobic and anaerobic bacteria. If she does not respond to antibiotics or there is deterioration refer to FRU.
- Refer to FRU for further management.

#### **1.4.10          Diagnosis and management of urinary tract infection**

- **Symptoms**

The woman will have the following symptoms:
---

- H/o fever on the first or second day or at the end of week.
- Pain in the renal angle or in the hypogastric region.
- H/o frequency of micturition, dysuria, retention of urine.

- **Signs**

You will see the following signs:

- Tenderness in the renal angle or on the hypogastric region.

- **Investigation**

On investigations you will see:

- WBC and polymorph count is high.
- Urine has pus cells and culture reveals causative organism. ( if available).

- **Treatment**

You must give her:

- Plenty of fluids by mouth.
- Antibiotic according to the sensitivity. (If facility is available)

### **1.4.11. Detection and management of breast complications**

#### **1.4.11.1. Breast Engorgement**

As you know :

- It is due to exaggerated venous and lymphatic engorgement of the breasts and prevention of escape of milk from lacteal system.
- It is usually seen on 3<sup>rd</sup> or 4<sup>th</sup> post-partum day.
- Breasts become tense, tender and knobby to feel.
- There can be fever, malaise and painful breast-feeding.
- For prevention keep the lacteal ducts open from the ante-natal period by cleaning. By putting the baby to the breast soon after delivery.
- Treated by firm breast support, cold fomentation, pain killers, to express milk manually or by breast pump from time to time to prevent engorgement and also after each regular feed by the baby.

#### **1.4.11.2 Cracked nipple**

- As you know that formation of raw area or loss of surface epithelium at the tip or base of the nipple is known as cracked nipple.
- It is caused by unclean hygiene resulting in formation of a crust over the nipple and by retracted nipple, vigorous sucking in engorged breasts or in depressed nipples or improper way of breast-feeding.
- Painful when infant sucks.
- You can treat it by application of allantoin ointment (If available) or edible oil.

#### **1.4.11.3 Acute Mastitis**

You must be aware that:

- It may be due to infection in a cracked nipple.



- Organism responsible is predominantly *Staphylococcus aureus*, nursing mother being the carriers or the infection may come from nasopharynx of the baby.
- It is seen in 1<sup>st</sup> or 2<sup>nd</sup> week of puerperium.
- It presents by fever (102 ° F or more), chills, pain and swelling in one quadrant of the breast, overlying skin is hot and red.
- If left untreated may lead to breast abscess.
- You must treat by appropriate antibiotic e.g. Inj. Crystalline Penicillin 5 lac units twice daily IM after sensitivity test for at least 10 days.
- Antinflammatory analgesics and sedatives may be given.
- Breast-feeding on the affected breast should be kept suspended as long as the infection or the cracked nipple persists. Manual expression of the milk during feeding (opposite side) may be helpful to relieve associated engorgement.

#### **1.4.11.4 Breast Abscess**

- Fever at the end of the first week.
- Pain in the breast.
- Cracked nipple.
- Examination reveals: temp 102 °F – 103 ° F. daily rise, localised tenderness, localised redness, tender fluctuant, swelling in any breast.
- On Investigation: WBC and polymorphs are high.
- Management :
  - a. Breast support.
  - b. Breast-feeding suspended on the side with cracked nipple, abscess.
  - c. Milk expressed from affected side.
  - d. Appropriate antibiotic to be given.
  - e. When pus is formed it is to be drained under general anaesthesia. Hence referred to FRU.

#### **1.4.12. Detection of and manage puerperal venous thrombosis**

Puerperal venous thrombosis is one of the important complications of puerperium. These include superficial thrombophlebitis and deep vein thrombosis. These are manifestations of one disease with different clinical entity.

- **Predisposing factors:**

- Anaemia
- Heart disease
- Immobilization
- Trauma/local infection

**1.4.12.1.** Superficial thrombophlebitis is more common in women who are:

- Old
- Obese
- Of high parity

There may be a history of varicose veins.

Thrombophlebitis can also occur in veins of the upper limbs, which have been used for intravenous infusions.

- It is obvious on clinical examination. Affected area is painful and tender, red, warm to touch with rapid pulse.

**1.4.12.2. Deep vein thrombosis has the following common risk factors:**

- Age over 35 years
- High parity
- Obesity
- Caesarean section
- Trauma to the legs
- Immobility

- Dehydration and exhaustion
- Smoking
- The use of oestrogens to suppress lactation

This is difficult to diagnose clinically in early stages.

- May remain asymptomatic in many cases.
- May present with pain in the calf and sole, swelling of the leg with increasing temperature, rapid pulse.
- Seen usually between 7<sup>th</sup> and 10<sup>th</sup> day of puerperium.
- Calf tenderness on deep pressure and positive Homan's sign i.e., pain in the calf with dorsiflexion of the foot.

Management Refer to FRU.

#### **1.4.13. Detection and management of puerperal psychosis**

Women who had puerperal psychosis before become prone to develop psychosis in subsequent puerperium. Severe eclampsia, difficult labour, puerperal fever can predispose the condition. The disorder starts after 3 to 4 days of a child-birth as insomnia, headache, delusions, refusal of foods and confusion. There is a tendency to suicide and infanticide. There is no interest in the child.

#### **Treatment**

Refer to FRU and counsel the relatives.

#### **1.4.14. Self-assessment questions:**

8. What is the need of post-natal care?
9. List two main objectives of second health check-up of post-natal woman.
10. Write three important health and nutrition educational messages for post-natal woman.

## 1.5. Broad guidelines for referral during pregnancy & child birth

At end of this sub-unit, you should be able to:

### Learning objectives:

- give primary management to the women with emergency before referral to FRU

### Contents:

- 1.5.1. Abortion
- 1.5.2. Severe anaemia
- 1.5.3. Ante-partum haemorrhage
- 1.5.4. Eclampsia
- 1.5.5. Prolonged/obstructed labour
- 1.5.6. Uterine rupture
- 1.5.7. Post-partum haemorrhage
- 1.5.8. Puerperal sepsis

### 1.5.1 Abortion

Abortion is responsible for 12% of maternal deaths in India.

When you receive a case of abortion, it is important to recognise the type of abortion.

- **Note pulse, temperature, blood pressure, pallor,**
  - Size of uterus
  - Cervical dilatation
  - Presence of products in uterus
  - Tenderness
- **Diagnosis of emergency in abortion**

Following signs and symptoms help you to decide:



i. Hypovolemic shock:

- Severe bleeding,
- Fast feeble pulse,
- Low blood pressure,
- Pallor (conjunctiva, palm, around mouth),
- Sweating,
- Fast breathing (RR 30/minute or more),
- Anxious, confused or unconscious.

ii. Sepsis:

- H/o interference with pregnancy,
- Abdominal pain,
- Malaise, fever,
- Prolonged bleeding.

iii. Injury to other organs

- Nausea, vomiting,
- Fever,
- Abdominal pain,
- Distended abdomen,
- Absent peristalsis,
- Hard, tense abdomen,
- Rebound tenderness.

• **Do primary management**

- Intravenous fluids, sedation
- Oxytocin, syntocinon or methergin
- Antibiotics
- Digital evacuation of uterus

• **Referral is done to FRU for**

- Evacuation of uterus in incomplete abortion where anaesthesia is needed,

- Blood transfusion in hypovolemic shock,
- Control of septicaemia
- Laparotomy if needed, i.e. injury to the abdominal viscera suspected, haemoperitoneum and pyoperitoneum.
- Treatment of renal failure.

### **1.5.2. Severe anaemia**

You must be aware that anaemia is responsible for 19% of maternal deaths in India.

WHO defines severe anaemia, when Hb is  $<7$  g% . All women with Hb 7 gms or less need referral. You can diagnose severe anaemia by noting :

- Marked pallor of skin, tongue, nail, conjunctiva,
- Oedema on limbs and puffiness of face,
- Breathlessness on exertion,
- If C.C.F.: Enlarged, tender liver, Crepitation in lungs, Orthopnoea, Marked oedema on feet.

- **Risks in severe anaemia are:**

As you know that the risks in severe anaemia are:

- C.C.F., which may be fatal,
- Preterm labour,
- Shock if A.P.H./P.P.H.,
- Cerebral anoxia.

- **You must do primary management before referring:**

- Oxygen
- Diuretics
- Hospitalisation

Refer with relatives for blood transfusion to FRU.

### **1.5.3. Ante-partum haemorrhage (APH)**

- **Do primary management**

- Intravenous fluids,
- Oxygen, sedation
- No vaginal examination,
- Keep warm with blankets,
- Turn to left lateral position,
- Transfer with relatives.

- **Referral is done for:**

- Investigation if coagulation defect,
- Blood transfusion,
- Surgical help (caesarean section, Hysterectomy)
- Treatment of DIC,
- Management of P.P.H.,
- Management of renal failure.

### **1.5.4. Eclampsia**

You must be aware that toxemia of pregnancy is responsible for 15% of maternal deaths. Eclampsia is convulsions that develop from severe pre-eclampsia. 50% of cases of eclampsia appear during ante-natal period.

- **Do primary management**

- Deep sedation by slow I.V. injection of 10-20 mgs. Diazepam or 15 mg. Morphine sulphate.
- Insertion of mouth gag.
- Oxygen, suction,
- Semiprone position,
- Transport once sedation is effective and fit is controlled

- **Principles of primary management**

As you know the principles of primary management are :

- To prevent asphyxia (Maintain airway)
- To control fit
- Prevention and treatment of complications

- **Referral is done for:**

- Safe speedy delivery,
- Medical treatment of convulsion
- Treatment of renal failure if present

### **1.5.5. Prolonged /Obstructed labour**

You must be aware that this condition accounts for 8% of maternal deaths in developing countries

- **Diagnosis**

- H/o labour pains for more than 12 hours
- Slow progress of labour
- Arrest of progress of labour in obstructed labour and appearance of Bandl's ring,
- Sign and symptoms of maternal exhaustion, rapid pulse, dry tongue,
- Tired and anxious, non-cooperative woman
- Foetal distress/death
- Non-descent of the presenting part,
- Premature rupture of membrane and drainage of liquor
- Cervix and presenting part not well applied to each other
- Large caput and excessive moulding over the foetal head



- **Do primary management**

- Oxygen;
- Intravenous fluid, sedation;
- Antibiotics;
- Catheterization of bladder;
- Assessment of cervical dilatation and pelvis;
- Augmentation of labour if no mechanical obstruction and mother and foetus are fine (Monitor labour by partogram);
- Refer with note if no progress or obstructed labour.

- **Referral for**

- Surgical help for termination of labour i.e caesarean section or forceps delivery.
- Blood transfusion.

### **1.5.6. Uterine Rupture**

- You must be aware that this is one of the injury which can be fatal if undiagnosed and left untreated. It may be an outcome of undiagnosed obstructed labour, overdose of syntocinon drip.
- More common in grand multipara.

- **Diagnosis**

- H/o any of the above mentioned etiological factors.
- Severe pain in abdomen followed by cessation of pains.
- Shock, loss of regular intermittent uterine contractions.
- Loss of uterine contour .
- Easily palpable foetal parts.
- Absent foetal heart sound.
- Vaginal bleeding.
- Interference by Dai.

- **Do primary management**

- Treatment of shock;
- Antibiotic;
- Immediate transfer with referral note and relatives.

- **Referral to FRU**

- Surgical help in form of repair of ruptured uterus or hysterectomy
- Blood transfusion
- Treatment of sepsis

### **1.5.7. Post-partum haemorrhage**

- **Diagnosis of PPH**

- H/o severe blood loss after birth of baby
- H/o retained placenta/whole or in part
- H/o manipulation or instrumentation during delivery
- Hypovolemic shock
- Atonic uterus found on P/A examination
- Tears in vagina/cervix on P/S examination

- **Do primary management**

- Treatment of shock;
- Oxytocics;
- Bimanual compression of uterus;
- Suture of cervical and vaginal tears;
- Vaginal packing;
- Referral in left lateral position.

- **Referral for**

- Blood transfusions;
- Manual removal of placenta;
- Repair of tears in vagina, cervix.

### **1.5.8. Puerperal sepsis**

Suspect puerperal sepsis when there is H/o fever and all or any two of following in first 10 days:

- H/o foul smelling vaginal discharge, purulent discharge,
- Abdominal tenderness,
- Pelvic or abdominal pain,
- Subinvolution of uterus. Normal rate of reduction in uterine height is 2 cms daily during the first week.

- **Do primary management**

- Antibiotics
- Refer if no improvement in 48 hours
- Refer for surgical intervention-drainage of pyoperitoneum, peritonitis with intestinal obstruction.

- **Referral for**

- Investigations (culture and sensitivity of pus if facility is available)
- Removal of retained products if any
- Treatment of septic shock
- Laparotomy if required





## Unit-2

### ***SAFE ABORTION***

#### **LEARNING OBJECTIVES**

At the end of this unit, you should be able to:

- select patients in whom MTP can be performed safely,
- follow up the patients who have undergone MTP,
- manage complications if any,
- define the MTP act.

#### **CONTENTS**

- 2.1 Introduction
- 2.2 Indication for MTP
- 2.3 Patient counselling before and after MTP
- 2.4 Selection of patients
- 2.5 Investigations
- 2.6 Steps of MTP
- 2.7 Post-operative care and follow-up
- 2.8 Complications of abortion
- 2.9 Health education/counseling
- 2.10 Record maintenance
- 2.11 Self assessment questions
- 2.12 MTP Act.

## 2.1. Introduction

You must be aware that approximately 11% maternal deaths are due to unsafe and septic abortions. Medical Termination of Pregnancy was legalized in 1971 in India. Some of the dangers of unsafe abortion are:

- Infections (sepsis) resulting in various life-threatening situations like peritonitis, septicemia, renal failure and death.
- Excessive vaginal bleeding resulting in shock, and death.
- May result in vesico-vaginal or recto-vaginal fistulae.

You have to play a vital role by informing women, family and community about the provisions under MTP act, where services are available to ensure safe abortion and follow-up care. During MTP the product of conception are removed from the uterus, under safe clean conditions by a qualified person, after assessing the woman's health condition provided the case fulfils the criteria (indication) for performing MTP. MTP is done in a hospital or health care centre, which has been approved by Government and has the required facilities and manpower.

While legal abortion today is a safe surgical procedure there can be serious complications, if high-risk cases are not recognised and MTP is performed without adequate back up services or performed by improperly trained health personnels.

This may result in immediate complications, which may prove fatal, as well as lead to long-term morbidity.

## 2.2. Indication for MTP

You can advise MTP in the following situation.

- If the continuation of pregnancy will endanger the life of the woman and cause grave injury to her physical and mental health.
- If there is danger of the child being born with handicaps or there is risk of child having physical and mental abnormalities.

- If the pregnancy had been caused by rape.
- If the pregnancy is due to failure of contraceptive methods by woman or man.

MTP can be performed upto 20 weeks but the best period for safe abortion is between 6-10 weeks of gestation. You can perform MTP at your PHC upto 8 weeks of gestation only.

### **2.3. Patient counselling before and after MTP**

Counselling should be an integral part of the abortion procedure as the woman undergoing a termination of pregnancy may be under several social and psychological stresses. The process of decision making may be difficult for her and she may need help. You have to counsel her and give her health education. Refer to Block on Communication.

- You should establish a rapport with the patient to allay her anxiety and provide her with accurate and unbiased information in a simple language.
- You should brief the woman about the method of abortion, choice of anaesthesia, type of sensations she can expect during the procedure and the associated risks.

### **Contraceptive counselling**

Contraceptive counselling must be given whenever the woman comes for MTP. At the time of abortion the woman is receptive towards contraception. The method of choice can be implemented at the time of operation or immediately afterwards.

**Any contraceptive method can be safely provided immediately after the MTP.**

- **Intrauterine device**

- The continuation rate for post abortion IUD insertion is good;
- Concurrent IUD in case of complete abortion is not associated with higher risk of complication.

- **Sterilisation**

Abdominal tubectomy can be safely performed concurrently with MTP. It is important that all out efforts should be made to convince the woman for adoption of post-abortal contraception, stressing the risk associated with the occurrence of unwanted pregnancies and repeated terminations. However, MTP should not be denied even in case of non-acceptance of contraception, in order to prevent the woman from seeking unsafe illegal abortions.

**MTP should not be refused even if concurrent contraception is not accepted.**

## **2.4. Selection of patients**

You must carefully select the patients for MTP so as to avoid complication.

Although first trimester pregnancy is a relatively simple procedure, nevertheless, it may be associated with a number of minor or major complications resulting in significant maternal morbidity and mortality.

### **Clinical assessment**

You must obtain a good history and perform complete general, systemic and gynaecologic examination for:

- a) Confirmation of pregnancy
- b) Assessment of exact period of gestation
- c) Associated gynaecological disorders and infection
- d) Associated medical problems



The findings should be recorded in the proforma given below:

### **ASSESSMENT PROFORMA**

- Demographic information
  - Age,
  - Marital status,
  - Occupation,
  - Religion,
  - Education,
  - No. of living children, Age of youngest child & Sex of children.
- History
  - Menstrual-cycle length, Date of LMP
  - Obstetric-parity, live births, abortions, previous LSCS
  - Contraceptives used
  - Reasons for MTP
  - Medical illness
  - Pelvic or abdominal surgery
  - Drug allergy
  - Immunization status
- General and systemic examination
  - Pulse, B.P.
  - Pallor, Jaundice
  - Heart, Lungs
- Pelvic examination
  - Size and direction of uterus
  - Pelvic masses, tenderness

<b>You must confirm the pregnancy and assess the size of the uterus</b>
---

It is essential as the patient may not be pregnant at all and amenorrhoea may be due to lactation or other abnormalities as vesicular mole or extrauterine pregnancy. It is not uncommon to see cases, where these conditions have been missed, leading to problems and complications at a later date. In case of any doubt refer the case to FRU.

You will find it difficult to establish the period of gestation if

- Date of last menstrual period not remembered.
- Conception during lactational amenorrhoea.
- Wrong dates provided intentionally as by unmarried.
- Previous irregular cycles or pill usage.
- Obesity.
- Presence of fibroids.

In order to avoid getting into complications after starting the procedure, one must assess the uterine size properly during bimanual palpation. It is recommended that at the PHC level, termination should not be attempted if the uterine size is larger than 8 weeks, even if duration of amenorrhoea is less than 8 weeks.

- **Associated gynaecological infections**

You must treat vaginitis and cervicitis with purulent discharge before MTP.

- **If there is any associated medical problems** such as

- Anaemia
- Hypertension
- Heart disease
- Renal disease
- Diabetes mellitus
- Bleeding diathesis

Refer to FRU

- If there is history of previous uterine surgery like (caesarean section)

**MTP IS NOT TO BE CONDUCTED AT PHC LEVEL IN THE FOLLOWING SITUATIONS:**

- Nulliparous woman
- Previous ceasarean section
- Period of gestation more than eight weeks
- Pregnancy with fibroid uterus
- Haemoglobin below 8 gms%
- Any associated medical disorders

MTP is avoided at PHC in above mentioned conditions because of higher risk of complications and non-availability of back-up services.

## **2.5. Investigations**

Investigations you should advise the following:

- Haemoglobin level.
- Urine for albumin and sugar.
- Blood grouping and Rh typing where required.

## **2.6. Steps of MTP:**

You will be taught about the steps of MTP in specialized skill training.

## **2.7. Post-operative care and follow-up**

- **Emergency attention**

You must tell her to report immediately to the centre if she experiences any of the following:

- Bleeding more than normal menstruation.

- Severe abdominal pain, distension or vomiting.
- Fever, chills or malaise.
- Foul smelling discharge.

- **Routine visit at the centre**

You must call the woman for a routine visit at the centre after two weeks. At this time you should do an internal examination to rule out continuation of pregnancy, incomplete abortion and pelvic infection and to check the CuT, if it had been inserted along with MTP.

- **Home visit by HA(F) or MPW(F)**

You must ensure that the health worker female or assistant visit the woman within one week to ensure the patient's well being. They should be told to look for any signs and symptoms requiring emergency treatment.

## **2.8 Complications of abortion**

- **Incomplete evacuation**

As you know it is the commonest complication. Patient presents with excessive or prolonged bleeding per vaginum, fever or pain abdomen. On examination, uterine size would not have come back to normal. Internal os may be open or closed.

The condition is preventable by ensuring complete evacuation with check curettage and quantitative assessment of the aspirated material. Treatment is by re-evacuation under antibiotic cover at a higher centre.

- **Continuation of pregnancy**

Sometimes there may be failure to terminate pregnancy, especially after menstrual regulation. Since the conceptus is very



small, it may be lying near the cornua at the fundus and may fail to get sucked. Other causes may be:

- Failure to assess the size and position of uterus.
- Presence of fibroids leading to suction of cervical canal only rather than the uterine cavity.
- Difficulty in dilatation may result in formation of false passage and continuation of pregnancy.
- Small size cannulae with small openings.
- Ineffective suction pump system can also result in procedure failure.

## • Infection

You must be knowing that infection is a risk of all intra-uterine operations. The symptoms generally appear on the second or third day after the procedure but can be delayed for upto ten days.

If you take the utmost care while performing the procedure that all the instruments used are properly sterilised and no touch technique is observed infection may be prevented. The parts of instruments that will enter the uterus should not touch objects or surfaces that are not sterile, including the vaginal wall, before being inserted.

The signs of infection are fever, abdominal pain, pelvic tenderness or subinvolution of uterus and bleeding per vaginum. In severe cases patient may present with signs of peritonitis or septic shock.

Treatment is with antibiotics and re-evacuation if there is evidence of retained products. It should preferably be done at a higher centre. Cases of peritonitis or septic shock should also be referred to a higher centre for proper management.

- **Remote complications**

- **Cervical injury**

Permanent structural damage to cervix may result from rapid mechanical dilatation beyond 10 mm, which may be forcible. This may lead to cervical incompetence, mid-trimester pregnancy losses and preterm births.

- **Chronic pelvic pain**

Chronic pelvic inflammation following MTP may result in secondary infertility, ectopic pregnancy and menstrual disorders.

- **Ashermann's syndrome**

It may occur due to vigorous curettage leading to secondary amenorrhoea and infertility.

- **Obstetric complications**

Complications may occur during future pregnancies e.g. adherent placenta and uterine rupture due to previous undiagnosed perforation in MTP.

- **Psychosomatic symptoms**

Long-term depression may be seen sometimes, especially if the termination has been carried out for medical reasons or has been enforced by the woman's husband or family members. Thus abortion counselling has an important role to play through the pre-and post-abortion period.

## **2.9 Health education/Counselling:**

- You should make the woman, family and community aware that use of contraceptive is better than going for MTP as the complications are more in MTP.

- Abortions are to be done in recognized centres by trained personnel between 6-10 weeks to minimize the complications.
- Abortion performed after 10 weeks gestation is associated with more complication even if done by trained personnel.
- Abortion by untrained personnel can result in life threatening situation. It can also lead to infertility, ectopic pregnancy, fistula and chronic pelvic inflammatory disease.
- It is advisable to use contraceptives after abortion instead of repeated MTPs.

**You should counsel the woman about the MTP procedure (Refer to Block on Communication)**

## **2.10 Record maintenance**

You must maintain records as per format. Refer to Block on Management

### **Key points : (Safe Abortion)**

- Proper selection of cases will reduce the complication of the MTP
- Knowledge of period when MTP is safe.
- Counselling regarding safe abortion and need for appropriate contraception.
- Follow-up of women who had MTP.
- Early detection of complication after MTP and appropriate referral.
- Educate the public about the availability of safe abortion legal settings.

## **2.11. Self Assessment Questions:**

10. What are the dangers of unsafe abortion?
11. Which period of pregnancy is best for safe abortion/ MTP?

## **2.12. Medical Termination of Pregnancy Act**

Medical Termination of Pregnancy Act, 1971 came into force from 1.4.1972.. Implementing rules and regulations were revised in 1975, to simplify the procedure for approval of the place and for ready availability of services.

Important sections and clauses from the Act are:

### **Condition under which pregnancy can be terminated**

Termination of pregnancy is permissible upto 20 weeks duration, if opinion is formed by one Registered Medical Practitioner (for pregnancies less than 12 weeks) or two registered medical practitioners (for 12-20 weeks pregnancy), in good faith, that:

1. Continuation of pregnancy would involve a risk to the life of pregnant woman or grave injury to her physical or mental health.
2. There is a substantial risk of the child born to suffer from such physical or mental abnormalities as to be seriously handicapped.
3. Pregnancy resulting from rape and from failure of contraceptive methods constitutes a grave injury to mental health of the woman. Account may also be taken of the woman's actual or foreseeable environment in determining the risk to her health.

### **Place where MTP can be performed**

Every pregnancy is required to be terminated at Government hospital or at a place approved by the government for the purpose.

For approval of the place, an application has to be addressed to the District C.M.O in form 'A' and the applicant has to make arrangements for inspection of the place.



Facilities needed for approval of a place:

- Safe and hygienic condition.
- Operation table and instruments for performing abdominal or gynaecologic surgery.
- Anaesthesia equipment, resuscitation equipment and sterilization equipment.

The C.M.O after verifying the conditions recommends it further to the respective state/U.T. Government.

The certificate of approval should be conspicuously displayed at a place so as to be easily visible.

### **Experience or training required for MTP**

As per the MTP Act, only a Registered Medical Practitioner having Obstetrics and Gynaecology experience is authorised to perform abortion. Under the new MTP rules (1975) the District CMO is empowered to certify that a doctor has the necessary training in Obstetrics and Gynaecology to perform MTP. Previously it had to be done through the certification board.

A person having any one of the following experiences can be authorised:

- a. For medical practitioner registered in a State Medical register immediately before commencement of the Act:
  - Minimum experience of 3 years in the practice of Obstetrics and Gynaecology.
- b. For practitioners registered on or after the date of commencement of the Act:
  - 6 months of house job in Obstetrics and Gynaecology or,
  - One year experience in the practice of Obstetrics and Gynaecology at a hospital or,

- If he/she had assisted a Registered Medical Practitioner in performance of 25 cases of MTP in an institution approved for training by the Government.
- Postgraduate degree or diploma holder in Obst. and Gynaecology.

### **Consent for MTP**

Informed written consent of the woman is taken in form "C". Written consent of the guardian is required in case of a minor (under 18 years of age) or a lunatic.

### **Confidentiality/Custody of forms**

Abortion has to be treated as a statutory personal matter. As such abortion services are to be provided in strict confidence and the name of the abortion seeker is kept confidential.

## Unit-3

# CONTRACEPTION AND STERILIZATION

### LEARNING OBJECTIVES

At the end of this unit you, should be able to:

- explain the various contraceptive methods and list the benefits, side-effects and contra-indications for each method and appropriate referral.
- provide health education/counsel the women, family and community.
- supervise ANM while she is offering contraceptive services.

### CONTENTS

- 3.1 Introduction
- 3.2 Estimation of eligible couples
- 3.3 Natural methods of contraception
- 3.4 Condoms
- 3.5 Spermicides
- 3.6 Oral contraceptive pills
- 3.7 Non-hormonal oral contraception
- 3.8 IUCD
- 3.9 Sterilization methods (STERILISATION)
- 3.10 Health education/counselling
- 3.11 Monitoring/reporting
- 3.12 Self-assessment questions

### 3.1. Introduction

You must be aware that contraception includes all methods used to prevent conception and thus regulate fertility. Each method prevents pregnancy in a different way. The contraceptive method may be:

- a) Temporary (spacing), for delaying first pregnancy or spacing the child-births.
- b) Permanent (sterilization), for limiting the family after achieving the desired family size.

#### **SPACING OF CHILDREN:**

- Ensures health promotion of the mother.
- Enables her to care and breast feed her child.
- Prevents low birth weight of the next infant.

You must be aware that the risks associated with contraception are much less than risk of pregnancy, M.T.P. and childbirth therefore it is better to avoid pregnancy by use of contraceptives. Many women may like to use contraceptives but they are not aware of its availability, thus there may be unplanned pregnancies and women may seek abortions which may be performed by untrained persons under unhygienic and unsafe conditions which result in complications and even death of the women. Easy accessibility to good quality family planning services is basic right of all women to prevent pregnancy, unsafe abortions and childbirth related deaths and long-term morbidity.

Regular contact between you and the client is very essential for satisfactory use and continuation of contraceptive methods. Objective of this module is to enable you to have necessary knowledge about different contraceptive services including counselling and appropriate referral.



### **3.2. Estimation of eligible couples:**

The eligible couple and child register will be able to provide the number of couples requiring spacing/permanent methods of contraception.

You must remember that the age group requiring priority attention for family planning services is between 20-30 years. They are to be given advice on birth spacing as a health measure and are to be informed on use of contraceptives. Women with 2 children or less can be counselled for birth spacing.

### **3.3. Natural Methods of Contraception:**

The following methods are included in the natural methods of contraception:

- 3.3.1 Breast-feeding
- 3.3.2 Customary separation or abstinence of marital partners after birth of baby.
- 3.3.3 Sex without penile vaginal intercourse.
- 3.3.4 Coitus Interruptus (Withdrawal method).
- 3.3.5 Fertility awareness methods.

#### **3.3.1 Breast feeding:**

You must remember that Breast feeding can be used as an effective method of contraception for about 6 months provided the mother practices exclusive breast feeding i.e. no substitute of breast milk and interval between feeds more than 6 hours. Further menstrual period must not have returned after delivery.

- **Mechanism of action:**

Frequent sucking of breast by baby causes high level of prolactin secretion in the mother. High level of prolactin is associated with suppression of ovulation. After 6 months

following delivery many women will begin to ovulate even if their menstrual period has not returned. Hence breast-feeding can no longer be effective after 6 months post-partum.

- **Advantages:**

Breast feeding as a method of contraception is economical, effective if used properly, and it promotes bonding between mother and baby.

- **Disadvantages:**

As you know effectiveness greatly decreases in following situations:

- When breast-feeding is no longer exclusive (i.e. liquids or food are substituted for a breast milk) or any two breast feedings are more than 6 hours apart.
- After 6 months post partum even if menstruation has not started.
- When menses returns.

### **3.3.2. Customary separation or abstinence of marital partners after birth of baby:**

In certain communities, conception/pregnancy is avoided by observing social customs of separation of marital partners for varying periods after the birth of baby.

- **Mechanism of action:**

By abstinence

- **Advantages:**

Mother can devote more time to baby and regain her strength. The baby develops greater closeness to mother.

- **Disadvantages:**

May not be conducive to modern pattern of living. May disrupt marital relationship.

### **3.3.3 Sex without penile vaginal intercourse:**

This is practiced by expression of caring and fondness of partners without penis in or near the vagina e.g. touching, hugging, and masturbating.

- **Mechanism of action:**

Sperms never reach the vagina.

- **Advantages:**

No possibility of pregnancy if ejaculation does not occur in or near the vagina (e.g. between thighs). Can be practiced when there is pain, infection being treated or after surgery. Offers protection against STD and AIDS/HIV infection.

- **Disadvantages:**

Objection by one or both the partners.

### **3.3.4. Coitus Interruptus (Withdrawal Method)**

During sexual intercourse, erect penis is withdrawn just before ejaculation. Semen is discharged outside the vagina. It is widely practiced method all over the world, in all cultures and by people of all regions.

- **Mechanism of action:**

It works by depositing the sperms outside the vagina.

- **Advantages:**

Acceptable to many religious groups and societies cost effective and used widely all over the world. The male partner shares responsibility for contraception. No physical side effects are caused.

- **Disadvantages:**

Not suitable for those with premature ejaculation, who cannot control their build up to ejaculate and the adolescents. It does not offer protection against STD, HIV/AIDS.

### **3.3.5. Fertility Awareness Methods**

Women learn to recognize the fertile days of the menstrual cycle over several months and avoid intercourse or use the barrier methods on those days. Fertility awareness methods include the following:

Calendar method.  
BBT (Basal Body Temperature).  
Cervical mucous method  
Sympto-thermal method.

- **Mechanism of action:**

Fertilization is avoided by abstinence or, when barrier method is used thereby preventing the sperm from entering the cervix and uterus during the fertile phase of the cycle.

1. **Calendar (Rhythm) method:** You should ask the client to keep record of 6 menstrual cycles and then calculate the fertile days. From the record the longest and shortest cycles are chosen. The shortest cycle minus 18 days gives the first day of the fertile period. The longest cycle minus 10 days gives the last day of the fertile period. For example if a woman's menstrual cycle



varies from 26 to 31 days, the fertile period during which she should not have intercourse would be from 8<sup>th</sup> day to 21<sup>st</sup> day of the menstrual cycle, counting day 1 as the first day of the menstrual period. Fig. 3.1. shows the fertile period and the safe period in a 28 day cycle.

Sun	Mon	Tue	Wed	Thurs	Fri.	Sat
	1	2	✓3	✓4	✓5	✓6
7	8	9	10	<u>11</u>	<u>12</u>	<u>13</u>
<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>
<u>21</u>	<u>22</u>	<u>23</u>	<u>24</u>	25	26	27
28	29	30	31			

✓3 First day  
of period

11 First day  
of fertile  
period.

Fig. 3.1  
Safe period in 28 days cycle

2. **Basal body temperature (BBT):** You must remember that this method identifies the day of ovulation but not the beginning of fertile period. Hence, for the effectiveness of this method, intercourse is to be avoided during first half of cycle until 3 days after the temperature has risen; or uses back-up barrier method. You must tell the woman to record the temperature every morning before getting up from bed as soon as the woman is awake. The special BBT thermometer is useful. Tell her to record the temperature on BBT chart as a dot and connect the dots with a line. When BBT has risen 0.2 to 0.5 deg F and remains elevated for 3 days, the fertile phase is over.
3. **Cervical mucus method:** Fertile period is indicated by a sensation of wetness at vulva or when mucous is observed. To observe mucous, you can tell her to wipe vulva with a tissue paper. When she feels or sees mucous she is in the

fertile period. Peak symptom day is the day of maximum mucous. During this period tell her to avoid sex. If unsure of presence of mucous, use of condom by male partner is essential. Spermicides, vaginal infection, drugs and intercourse can affect normal pattern of woman's cervical mucous. Mucous can be recorded on a daily basis in a chart.

4. **Sympto-thermal method:** This method combines cervical mucous method and BBT. Beginning of fertile period is indicated by cervical mucous or even by calendar method and the end of fertile period by BBT. Fertile period ends 4 days after peak mucous or 3 days after sustained rise of BBT which ever is later.

- **Advantages:**

- No physical side effects.
- Free and inexpensive.
- Responsibility shared by both partners.
- Acceptable to all religions and cultures.
- Effectiveness and use increased by using with barrier method during pre-ovulatory phase (first half of cycle) and fertile period.
- Training the couple in these methods also increases awareness and knowledge about reproduction.

- **Disadvantages:**

- It does not offer protection against STD and AIDS.
- Training in the method by a counsellor is required for 3-6 months.
- Correct records need to be kept initially carefully.
- Abstinence needs to be practised for 10-15 days of unsafe period in each cycle or use barrier method during this period.
- Demands commitment from both partners.
- It is not effective in woman with irregular cycle and infection.

- Spermicidal use interferes with mucous method.
- Febrile conditions interfere with BBT method.

- **Selection of Clientele:**

Fertility awareness method requires conscientious adherence and a commitment to abstinence by both partners. You must tell them that methods have a high failure rate.

- **Selection of procedure:**

The periodic abstinence depends on the couple's ability to learn the method and willingness to adhere to it. The temperature (BBT) or mucous method and sympto-thermal method are more reliable than the calendar method alone.

### **3.4. Condoms:**

Barrier methods of contraception especially condoms and also spermicide help preventing pregnancy.

Condom is put on the hard erect penis immediately before intercourse. It collects the semen and prevents the sperm from entering the women's vagina. About 1 cm. of condom is left loose to hold the semen (condom with a teat). You should tell the client that after ejaculation, as penis is withdrawn, the condom is to be held at the base of the penis to prevent it from slipping off and spilling the semen. A new condom must be used during each act of intercourse.

**3.4.1. Mechanism of action:** It prevents deposition of sperm in the vagina.

**3.4.2. Advantages:**

- Easily available.
- Easy to carry.
- Cheap.

- Protects against STD and AIDS.
- Ensures male participation.
- No prescription is needed.
- No systemic side effects.
- Help men with premature ejaculation.
- Effective when used with a spermicide.
- Help in prevention of cancer cervix in female partner.

#### **3.4.3. Disadvantages:**

- Interrupts sexual intercourse, as condom has to be put on an erect penis.
- Penile sensitivity sometime decreases.
- It may tear off or slip off during intercourse and can fall if not removed correctly.
- Condom may deteriorate in too much heat or light or if stored for more than 3 years.

#### **3.4.4. Selection of condom:**

Condoms are available in large variety of sizes, thickness, colours, textures as well as of lubricated or non-lubricated form. You must tell the client that if he is allergic to latex or lubricants, local irritation could occur.

- **Condom is best indicated under the following conditions:**
  - Best for partners at risk of exposure to STDs and AIDS.
  - As a back-up method, when pills are forgotten for more than 2 days.
  - When other effective methods are contraindicated for women e.g. heart disease, liver disease, or the woman is unwilling to use other effective methods.
  - Women who are breast-feeding and need contraceptive.



### **3.5. Spermicides**

Spermicides are available in the form of creams and foaming tablets or suppositories for example “Today” – a foaming tablet is available. It contains Nonoxynol-9. They can be used with condoms to increase effectiveness.

**3.5.1. Mechanism of action:** Spermicides inactivate the sperms. The protection begins 10 to 15 minutes after insertion and they remain effective for about one hour.

**3.5.2. Indications:** You can advise this to the women who are

- Breast feeding
- Using barrier methods like condoms
- At risk of exposure to STD including AIDS
- Unwilling to use or have contraindications to other methods

**3.5.3. Advantages:**

- Easy to use
- Reversible
- No medical intervention or prescription required
- Helps protection against STDs
- No systemic effects

**3.5.4. Disadvantages:**

- Effective for a short period-1 hour only.
- Must be used before each act of sexual intercourse.
- May interrupt sexual intercourse and needs privacy as it is to be inserted 10 minutes before the act.
- Some women may be sensitive to the spermicide and develop irritation.

### 3.5.5. Contraindications:

- Woman or partner allergic to Nonoxynol-9

### 3.5.6. Instructions to clients:

- It should be inserted just before intercourse.
- If more than one hour passes the second dose will be needed.

## 3.6. Oral Contraceptive Pill:

You must be aware that you should have the necessary knowledge to provide Oral Contraceptive Pill Services including counselling, appropriate screening and selection of clients, management of side-effects and offer follow-up services. There are different types of Oral pills. The common ones in use under family planning welfare programme in the country is Mala-N./Mala-D. (Fig. 6.2)

### 3.6.1 What is (Mala-N/Mala-D) Oral Pill ?

- Mala --N/ Mala D is a contraceptive pill. It contains DL Norgestrel 0.30 mg. and Ethinyl Estradiol 0.03 mg per tablet.

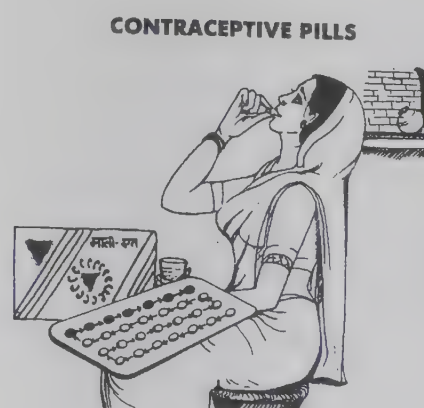


Fig. 3.2  
Mala-N

It is an effective, safe and reversible contraceptive for women desiring to delay their first pregnancy or space the next child. Mala D/Mala-N is available in packages containing supply for one cycle. Each packet has 28 tablets; first 21 of

which are white hormonal tablets and remaining are coloured iron tablets for maintaining the continuity. Mala N is available free of cost under National Family Welfare Programme and Mala D under the Social Marketing Programme

### **3.6.2. How does it work?**

The pills act by suppressing release of the ovum (the egg cell) from ovaries.

### **3.6.3 Where to get the pill ?**

The pills are available free of charge as Mala N at all the Health and Family Welfare Centres and Government Hospitals. They are also sold in chemist shops and social marketing outlets under the name of Mala -D at subsidized cost.

### **3.6.4. Advantages**

- Safe
- Reversible
- Decision with woman herself
- Non-invasive
- Privacy not required
- Other health benefits are:
  - Reduces menstrual blood loss, thus reduces chances of anaemia.
  - Relief from pain during menstruation.
  - Relief from premenstrual symptoms.
  - Regulates menstrual cycles if they are irregular.
  - Reduces chances of ectopic pregnancy.
  - Provides some protection against pelvic infection.
  - Protects against benign tumours of breast and ovarian cysts.
  - Reduces chances of developing cancer of uterus and ovary.

### **3.6.5. Disadvantages**

- Need to take daily
- No protection from STD/AIDS

### **3.6.6 Selection of acceptors**

You can advise any woman in the reproductive age group who wishes to delay the first pregnancy or wants to postpone the next pregnancy to use oral pills provided she does not have any contraindications for its use.

You must screen the acceptor for finding out her suitability for use of pills. You should fill the Checklist given below:

#### **I. Ask menstrual history:**

- Date of last menstrual period (to exclude pregnancy).
- Number of days she bleeds during period (OC reduces bleeding).
- Interval between two periods. (OC causes cyclic bleeding).

#### **II. Ask Obstetric History:**

- Number of children
- Age of last child
- Whether the child is breast feed (OC is not given for the first six months)

#### **III. Ask the questions serially from the checklist.**

- Look for gross malnutrition or obesity
- Examine eyes for jaundice
- Look for oedema over legs and face
- Count pulse rate
- Palpate breasts for lump
- Perform urine analysis for sugar and albumin



- **Absolute contraindications**

- i. Pregnancy
- ii. H/o Thromboembolism
- iii. H/o Cerebrovascular accident
- iv. Cardiac disease
- v. Malignancy of breast
- vi. Malignancy of genital tract
- vii. Active liver disease
- viii. H/o Cholestatic jaundice during pregnancy
- ix. Migraine

- **Relative contraindications**

- i. Undiagnosed abnormal uterine bleeding
- ii. Lactating mothers in first 6 months
- iii. Age over 40 years : : over 35 years if smoker
- iv. Mild Hypertension
- v. Gross Obesity
- vi. Diabetes Mellitus
- vii. Epilepsy
- viii. Recent history of depression
- ix. Recent history of oligomenorrhoea
- x. Recent history of amenorrhoea
- xi. H/o Jaundice within last 6 months
- xii. Sick cell disease (trait not a contraindication)

**Check list for selection of acceptors of Oral pills**

Fill the following check-list before selecting an acceptor for oral pill. If any of them is positive, then she should be referred to medical officer.

1. Age above 40 years.
2. Smoker aged above 35 years
3. Oral Pills used for more than 5 years.
4. Pregnancy.
5. Lactating less than 6 months.

6. Complaint of prolonged/frequent headache.
7. Visual disturbances.
8. Breathlessness on exertion.
9. Fits.
10. Persistent/frequent attacks of pain in abdomen.
11. Irregular vaginal bleeding.
12. History of taking drugs.
13. Repeated skin rashes.
14. Gross malnutrition
15. Gross obesity.
16. Yellow skin and conjunctiva (Jaundice)
17. Pulse rate above 120/min.
18. Oedema of extremities.
19. Lump in breast.
20. Sugar in urine – Diabetes.
21. Albumin in urine.

The woman with history of toxæmia of pregnancy should not be put on oral pill.

### **3.6.7 Special situations for oral contraceptive use**

- **Lactation**

Combined oral contraceptives containing oestrogen adversely affect both the quantity and quality of the breast milk and also reduce the duration of lactation. You should withhold combined oral contraceptives until six months after delivery or till the infant is weaned; whichever is earlier. No deleterious effects have been so far reported from the transfer to the infant of a small amount of contraceptive steroids in the breast milk. However, long-term epidemiological studies are still continuing.

- **Drug Interaction**

Drugs, which may reduce the efficacy of oral contraceptive pills, are Rifampicin, Antibiotics, Anticonvulsants and Antifungal drugs.

Management varies according to the duration of such medication. A back-up contraceptive method; e.g. condom is recommended for short-term use upto one week. Clients taking medication for more than one week should be advised to switch over to another contraceptive method.

- **Diarrhoea and Vomiting**

Irregular absorption of drug during such illness can reduce the efficiency. To avoid failure of pills you must advise a back-up method such as condom during diarrhoea and/or vomiting and continued for seven days after controlling the symptoms.

### **3.6.8. Side-effects:**

Oral Contraceptives produce some metabolic, biochemical and functional changes which are responsible for a few minor side-effects and adverse effects.

- **Minor side-effects :**

You must remember that women on oral contraceptives pills experience some minor side effects like

1. Nausea Vomiting
2. Breast tenderness
3. Headache
4. Depression
5. Breakthrough bleeding
6. Mild elevation of blood pressure (which usually disappears on discontinuation of pills)
7. Weight gain
8. Return of Menstruation and Fertility: The incidence of post Oral Contraceptive pill amenorrhoea is low and there is no evidence of decreased fertility in oral contraceptive users.
9. Pregnancy Outcome: There is no evidence to indicate increased incidence of spontaneous abortion or foetal abnormalities in oral contraceptive users including in those

who conceive soon after discontinuing oral contraceptives. Where pregnancy has occurred during oral contraceptive use and the woman has inadvertently continued pills after missing the period, no increased risk of foetal abnormality has been demonstrated. However, pills should be discontinued in the event of suspicion of pregnancy.

Many of these symptoms disappear on continued use of pills hence you need to assure the user for the first three cycles.

- **Breakthrough bleeding**

Breakthrough bleeding is usually due to low oestrogen content in oral contraceptives. Mostly it stops with continued use. If the client complains of breakthrough bleeding then you should advise her an additional tablet for 2-3 days or change to a preparation containing 50 ug. Ethinyl estradiol. You should exclude gynaecological pathology before labelling the bleeding as breakthrough bleeding.

### **3.6.9. Instructions For Use Of 28 Pill Pack**

- **When to start Pills ?**

**You must tell her to start the pill on**

- I. Day 5 of Menstruation
- II. Day 1 of MTP/Spontaneous abortion
- III. After delivery –
  - Nursing mother : after 6 months
  - Non-lactating : after 6 weeks

- **How to take the pill?**

- i. Before starting the pills tell the client to read the instruction leaflet carefully if she is literate.
- ii. The first course should be started on the fifth day of the menstrual cycle (counting first day of bleeding as day



number one, by taking the pill from the pack marked as START.

- iii. For subsequent days, one pill a day should be taken from the pack in the order indicated by the arrows; till all the pills in that pack are over.
- iv. The pill should be taken every day at a fixed time, tell her preferably while retiring to bed.
- v. The next pack should be started the very next day by taking the first pill from the pack marked as START.
- vi. Tell them client to keep the pills away from children.

- **If a Pill is missed**

If a woman misses a pill on a particular night, tell her that the missed pill should be taken the next day as soon as she remembers. Tell her that she should take another pill at night as usual. In other words, on the day following a missed pill day, she has to take two pills. If she misses 2-3 pills, she should continue taking pills regularly but in addition she should also use another contraceptive method like condoms till the next cycle starts.

- **Back-up Contraception**

In certain situations there is a possibility of reduced efficacy of the pill and use of additional contraceptive protection may be necessary. Condom can be a good back-up contraceptive. You should give ten pieces of condom to a pill user for use in situations like missing two or more pills, during diarrhoea and vomiting, or use of drugs reducing efficacy of the pills.

- **Duration of Use**

In India continuous use of oral contraceptive pills over 5 years is not recommended. However, in women who are otherwise well, low dose oral contraceptives may be continued for several years under medical supervision and there is no need for periodic discontinuation. For women over 40 years of age, oral

contraceptives may be prescribed with caution. OCs to be stopped two months prior to planning of pregnancy.

- **Danger Signs**

Ask the oral contraceptive users to report immediately if they have

- Abdominal pain (severe)
- Chest pain, shortness of breath
- Headache – Severe throbbing unilateral
- Eye problems (visual loss, double vision, blurring of vision)
- Severe leg pains or swelling
- Refer such women to FRU.

### **3.6.10. Follow up Services**

Initially a woman can be given a packet of oral contraceptive pills. Later when the pills are found to be suitable for her, she can be given a supply for a further three months. Tell her that she must return regularly to the clinic/ service centres for getting the required supply and for necessary check-up at a regular interval every year thereafter. You will instruct the paramedical workers to follow the schedule during routine home visits.

- **First visit should be within 2 weeks.**

1<sup>st</sup> Visit is within 2 weeks after she has been put on pills:

- i. Enquire how she is feeling.
- ii. Treat minor ailments and reassure her.
- iii. Check the pill count from the packet.
- iv. Stress the need to take the pill regularly and to return for more pills before the packet is over.

- **Second visit**

The second visit is scheduled one month after she has been put on oral pills.

- Find out whether she is taking pills regularly, if not enquire as to why she has discontinued the pills.
- Ask if she has any complaints; if none give her 3 packets. Stress the need to take pills regularly and to return for more pills before the third packet is over.
- Reassure the beneficiary in case of any complaints and persuade her to continue pills.

- **Subsequent visits**

- Monthly: Until the side-effects cease and the woman is well adjusted to taking the pills regularly.

- **After six months.**

Annually thereafter; or earlier if there is any problem.

- Ascertain that she is taking pills regularly.
- Reassure her as needed.
- Treat or refer her for side effects.
- Give her supplies of pills.
- Get following information :
  - Date of LMP
  - Make sure she does not have any problems.
  - If any problems, see as per check list and return to the doctor.
  - Any irregularity in periods.

### **3.6.11. Medical check-up for oral contraceptive users**

First: Before starting the pills or within three months of starting the pills subsequently after 6 months, 12 months and then yearly or as and when referred by paramedical workers.

- Weight
- Blood pressure
- Breast palpation
- Per abdominal examination – Liver
- Per speculum and per vaginal examination.
- Urine examination for albumin and sugar
- Cervical smear (if available)

### **3.6.12. When to stop pills?**

She should be advised to stop pills after 5 years of continuous use or if she desires pregnancy stop 2 months before planning pregnancy or if she misses menstrual period for 2 months continuously.

If she develops or experiences:

- Discomfort in chest
- Any disturbances in vision
- Pain and swelling in legs
- Continuous headache
- Jaundice

### **3.6.13 Messages to be given to community**

You must give the following messages whenever the opportunity arises:

1. Pills are to be used regularly for avoiding pregnancy.
2. It is the optimum method to postpone first pregnancy  
Pills can be used for spacing the next pregnancy especially if the woman cannot use IUD.



3. Pills can be used continuously for 5 years safely.
4. Mala- N or Mala -D tablets contain very low doses of hormones; hence these pills are safe.
5. For appropriately selected acceptor pills are safe.
6. Pills do not lead to cancer.
7. Pills have many other health benefits in addition to contraception.

### 3.6.14. Clearing myths about pills

To promote pill acceptance, you should help remove the prevailing myths and explaining the facts.

Myths	Reality
1. Pills may lead to cancer	<ul style="list-style-type: none"> <li>- Pills offer protection against cancer of ovary and endometrium.</li> <li>- No demonstrated increased risk of breast cancer.</li> </ul>
2. Pills cause infertility	<ul style="list-style-type: none"> <li>- Pills do not lead to permanent infertility.</li> <li>- After discontinuation of pills fertility returns rapidly in majority of women.</li> </ul>
3. Pills harm women's health permanently	<p>Observations on millions of women have proved that there are no permanent ill effects.</p> <p>Taking pills is safer than pregnancy and childbirth.</p> <p>Pills in current use contain very low amounts of hormones; and hence do not lead to major complications.</p>
4. Baby may be deformed	<p>Even if pills are accidentally used during undiagnosed early pregnancy, there is no increase in risk of foetal abnormalities.</p>

5. Pills should be discontinued intermittently	Pills can be safely used continuously for 5 years. Interruption of pills without use of other contraceptive can result in unwanted pregnancy.
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(Refer to Government of India's Guideline for Oral Pills)

### 3.7 Non-hormonal oral contraception (Centchroman)

You must be aware that Centchroman is a non-steroidal chemical moiety. It is an anti-implantation agent and exhibits weak oestrogenic and potent anti-oestrogenic activity. Centchroman is available as 30-mg tablets. The first tablet is taken on day 1 of menstrual cycle and then one tablet biweekly for 3 months followed by one tablet once weekly till contraception is desired without any reference to menstrual cycle.

For example: Saheli, Centeron.

#### 3.7.1. Mechanism of action

It acts by slightly accelerating embryo transport and development. It suppresses uterine preparation for implantation, thereby producing asynchrony between embryo and uterine development, a critical requirement for implantation.

#### 3.7.2 Advantages:

- Normal ovulatory cycle is maintained, as it does not affect the hypothalamic-pituitary-ovarian axis.
- Does not cause nausea, vomiting, dizziness, weight gain and break-through bleeding, no acne, has no side effect on coagulation, lipid profile.
- User compliance is better than OCPs due to lack of serious side effects.
- Contraceptive effect of drug is reversible in 6 months.

- Subsequent pregnancy is normal.

### 3.7.3. Disadvantage

- The menstrual cycle is prolonged in some users, (delayed menstruation is of no consequence if tablets have not been missed. - If tablets are not missed but delay exceeds 15 days, pregnancy should be rule-out).

### 3.7.4. Contraindications:

- It should not be administered to women with recent history or clinical evidence of jaundice or severe hepatic dysfunction;
- polycystic ovarian disease;
- cervical hyperplasia;
- history of hypersensitivity to centchroman; chronic illness like tuberculosis and renal disease. It is not recommended in nursing mothers in the first 6 weeks post-partum.

### 3.7.5 How to take centchroman ?

You must tell the client that the dosage schedule has to be adhered to very strictly.

**Deviation from the usage instruction may lead to pregnancy.**

#### • Schedule:

- First tablet to be taken strictly on day 1st of menstrual cycle (menstrual bleeding).
- Second tablet on day 4.
- Subsequent tablets on every Sunday and Wednesday for 3 months.
- Followed by once a week (Sunday or Wednesday ) till contraception is desired.
- The tablet should be taken at fixed time (i.e. at bedtime).



Biweekly and weekly schedules are to be continued irrespective of menstrual periods. You must warn the client that if period is delayed by 15 days pregnancy must be excluded.

#### **In case of missed dose:**

The missed tablets should be taken as soon as possible and the normal schedule days are also adhered to.

In case of tablets being missed by 2 or more days but less than 7 days, continue the normal schedule and also use condom (barrier contraceptive) till next menstrual period.

In case a dose is missed for more than 7 days, reinstitute the dosage regimen afresh i.e, biweekly for 3 months and weekly thereafter.

### **3.8. IUCD – Intrauterine Contraceptive Device**

Copper T (CuT) is an intrauterine contraceptive device. CuT 200 B is a 'T' shaped plastic device made of polyethylene and impregnated with Barium Sulphate to make it radio-opaque. It is 3.6 cms in length and 3.2 cm in width. Copper is wound round its vertical stem.

Its surface area is 200 mm and the thread is attached to the lower end of the vertical stem. Figure 3.3 shows CuT 200 B. It is a safe and reliable method of contraception and it offers several advantages, namely –

- i) One time insertion procedure.
- ii) It is readily reversible.
- iii) It is coitus independent.
- iv) Effective for 3 years.
- v) It is cost effective.

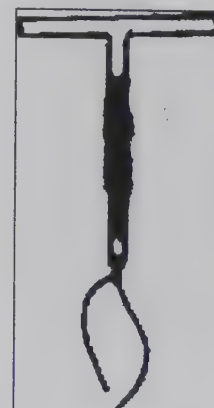


Fig. 3.3  
Copper T



### **3.8.1. Counselling**

You should counsel the client in a simple language, which she understands, and provide her the following information:

- i) It is one of the most effective and reversible methods for family planning.
- ii) It is ideal for spacing of children, as it does not affect the quality of milk in lactating mothers. Spacing is important for health of the mother and children.
- iii) It can be easily removed when desired.
- iv) It provides continuous protection for 3 years.
- v) Its insertion is a simple procedure and the optimal time of insertion is during the last two days of the menstrual period and immediately following MTP. It can be inserted within seven to ten days after last menstrual period as well.
- vi) It does not affect sexual pleasure, performance nor hurt the husband.
- vii) IUD does not affect women's chance of becoming pregnant after its removal.
- viii) IUD does not cause cancer.
- ix) It has 1-3% chance of failure.

### **3.8.2. Mechanism of action**

You must be aware that CuT 200 B exerts multiple anti-fertility effects on the reproductive tract:

- i) It inhibits sperm migration in the upper genital tract.
- ii) It stimulates foreign body reaction in the endometrium and releases macrophages, which prevent implantation.
- iii) Copper also causes changes in the endometrial cells, which prevents implantation of fertilized eggs.

### 3.8.3 Selection of cases for IUD

- **Indications:** You can advise IUD to the following group of clients:

- Any woman in the reproductive age group who wants to space or avoid pregnancy;
- It should be promoted in couples having two children when the age of the younger child is less than five years.

- **Contraindications**

**Absolute:** You should not insert IUD in the following conditions:

- Pregnancy.
- Anemia with haemoglobin less than 8 gm%.
- Excessive or irregular menstrual bleeding.
- Active genital tract infection e.g. vaginitis, cervicitis, pelvic inflammatory disease, septic abortion, cervical erosion.
- Enlarged uterus.
- Previous history of ectopic pregnancy.

**Relative:**

- Previous history of caesarean section.
- Medical disorders like heart disease, diabetes, etc.

In both these conditions refer to specialists at FRU

### 3.8.4 Timing of insertion

You must remember that

- The safest and optimum time for insertion is the last two days of the menstruation but can be inserted within 7-10 days of the LMP.
- Immediately after MTP is performed.

- After the first period following spontaneous pregnancy.

### 3.8.5 Venue of Insertion

You must be aware that IUD insertion should be conducted only at the subcentre, primary health centre, community health centre or hospital.

IUD should not be inserted at home.

### 3.8.6 Equipment and Supplies Required for IUD Insertion

Copper T insertion kit contains the following instruments:

- i) Copper T with inserter and plunger in a presterilised packet
- ii) Sim's /Cusco's speculum.
- iii) Anterior vaginal wall retractor.
- iv) Allis forceps / volsellum (small toothed).
- v) Sponge holding forceps.
- vi) Uterine Sound.
- vii) Scissors
- viii) Gloves
- ix) Sterilised cotton swabs stick in a jar with lid.
- x) Kidney tray for keeping used instruments.
- xi) Bowl for antiseptic solution.
- xii) Antiseptic solution (any one of the following).

- |    |          |    |
|----|----------|----|
| a) | Savlon   | 1% |
| b) | Cetavlon | 2% |

#### Sterilisation of equipment

Cu T is available in a presterilised pack.  
For instruments and gloves, refer to unit on infection prevention Unit VII.

You must instruct the LHV/ANM that all instruments/gloves are preferably autoclaved. In case autoclaving is not possible you must ensure that she sees that the instruments are fully immersed in water and boiled for at least 20 minutes.

**In order to prevent any infection it is essential that instruments are autoclaved or should be fully immersed in water and boiled for atleast 20 minutes after the water starts boiling.**

### **3.8.7 Examination of client**

- **History taking**

You must take the history very carefully which should include age of the client, medical, surgical, obstetric and gynaecological history.

Ask her

- Date of last menstrual period.
- Whether her periods are regular or irregular.
- Whether the flow is excessive or normal.
- The no. of deliveries and abortions/MTP, previous history of Caesarean section / ectopic pregnancy.
- Whether there is any recent history of post-partum/post abortal infection.

- **General Examination**

You must pay particular attention to detect whether the client has severe anaemia, diabetes or heart disease.

### **3.8.8 Preparation of client**

You must –



- i) Ask the woman to empty her bladder and lie down on the table on her back with knees flexed.
- ii) Protect her privacy.
- iii) Wash and scrub your hands. Wear sterile gloves taking care that the outer side of gloves does not get contaminated.
- iv) Clean the vulva with antiseptic solution.
- v) Conduct bimanual examination as follows:
  - a) Introduce two fingers of the gloved hand into the vagina and feel for the cervix. Place one finger on either side of the cervix. Move the cervix from side to side with the two fingers. If this produces pain, do not insert the IUD.
  - b) Put both the examining fingers in front of the cervix and gently bring them towards the public bone. Meanwhile the other hand is placed over the lower abdomen above the pubic bone. Gently try to bring together the fingertips of both the hands.

If the uterus is anteverted i.e. lies to the front, the entire uterus will be felt with both the hands as shown in Fig. 3.4.

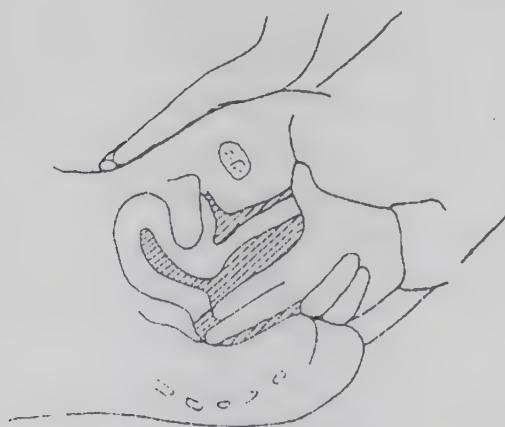


Fig. 3.4  
Anteverted uterus

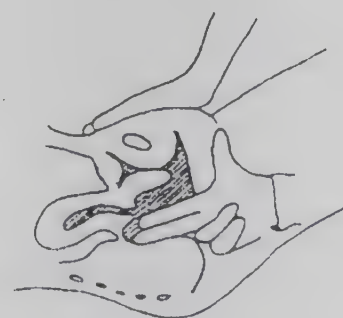


Fig. 3.5  
Retroverted uterus

c) Now put the fingers behind the cervix and repeat the procedure as shown in Fig. 3.5. If the uterus is retroverted, that is, lies to the back only the cervix will be felt between both the hands.

In case the uterus is enlarged or irregular in shape, there may be pregnancy or tumor, do not insert an IUD and refer the client to specialist for advice. If the uterus is normal in size change the gloves and proceed for inserting IUD.

vi) A speculum should be inserted sideways gently into the vagina to inspect the cervix. In case of difficulty in inspecting the cervix, use anterior vaginal wall retractor.

Clean the cervix with antiseptic solution and then grasp the anterior lip of the cervix with a Volsellum/Allis forceps, while telling her that she may feel slight discomfort.

vii) Gentle traction of the cervix with the Volsellum/Allis forceps should be maintained continuously downward and backward to correct the position of the uterus. This will help in introduction of the uterine sound and CuT.

viii) Introduce the uterine sound into the uterus gently till a slight resistance is felt which indicates that the tip of the uterine sound has reached the fundus. During the process gentle traction of the cervix with the volsellum / Allis forceps should be maintained. Care should be taken to introduce the sound according to the position of the uterus and direction of the uterine cavity as detected during the bimanual pelvic examination.

ix) The length of the uterus is determined and varies between 6 to 9 cms.

You must make sure that the vertical stem of the T is fully inside the inserter tube (the T can be shifted through the unopened

package) and that the end of the inserter tube opposite the T is close to the seal at the end of the package.

Place the package on a clean, hard, flat surface with the clear plastic side up. Partially open the end of the package farthest from the IUCD. Open the package approximately half way to the blue depth-gauge.

**If the uterus is enlarged or irregular in shape do not insert the CuT.**

Copper T is provided in a pre-sterilised package. To minimize the chances of contamination, do not remove the contents of the package before beginning the insertion procedure.

### 3.8.9 Loading technique

You must not open the sterile package containing the IUCD or load it until the final decision to insert an IUCD has been made (i.e., after the pelvic, including both speculum and bimanual exams, have been performed). In addition do not bend the arms of the "T" into the inserter tube (as instructed below) more than 5 minutes before it is introduced into the uterus:

Make sure that the vertical stem of the T is fully inside the inserter tube (the T can be shifted through the unopened T-ann package) and that the end of the inserter tube opposite the T is close to the seal at the end of the package.

Place the package on a clean, hard, flat surface with the clear plastic side up. Partially open the end of the package farthest from the IUCD. Open the package approximately half way to the blue depth-gauge.

III. Pick up the package holding the open end up towards the ceiling so that the contents do not fall out. Bend the clear plastic cover and white backing "flaps" at the open end of the



package away from each other holding them in place (See Figure 3.6). This will help maintain sterility of the white rod during loading. Using your free hand, grasp the white rod, which is behind the I.D. card, by the thumb grip and remove it from the package. Be careful not to touch tip of the white rod or brush it against another surface. Put the white rod inside the inserter tube and gently push the white rod up into the inserter tube until it almost touches the bottom of the T.

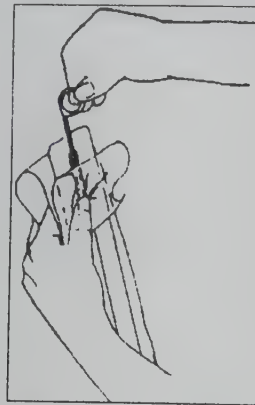


Fig. 3.6.  
Opening the flaps of the Pre-sterilized Cu-T

- IV. Release the white backing "flap" so that it is flat and place the package on a flat surface with the clear plastic side up.
- V. Through the clear plastic cover, place your thumb and index finger over the ends of the horizontal arms of the T and hold the T in place. At the open end of the package, use your free hand to push the ID card so that it slides underneath the T, and stops at the top seal of the package.

While still holding the tips of the horizontal arms of the T, use your free hand to grasp the inserter tube and gently push against the arm of the T (as indicated by the arrow in the figure 3.7). This will start the arms of the T bending downward, towards the item of the T (as indicated in the drawing on the I. D. card in the package).



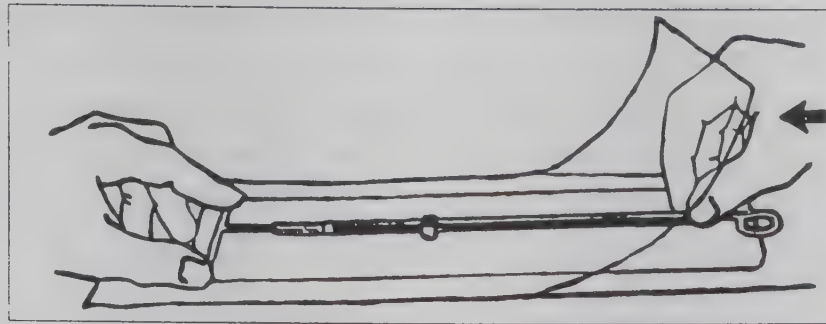


Fig.3.7.

Positioning IUCD and Bending Arms of T

- VI. Continue bending the arms of the **T** by bringing your thumb and index finger together. When the arms have folded enough to touch the sides of the inserter tube out from under the tips of the arms. Elevate the package and push and gently rotate the inserter tube over the **tips** of the arms so that the arms become trapped inside the inserter tube next to **the** stem. Insert the folded arms into the tube only as far as necessary to ensure retention of the arms (Figure Fig. 3.8) . **Do not try to push the arms too deep into the inserter tube; it will affect their flexibility.**

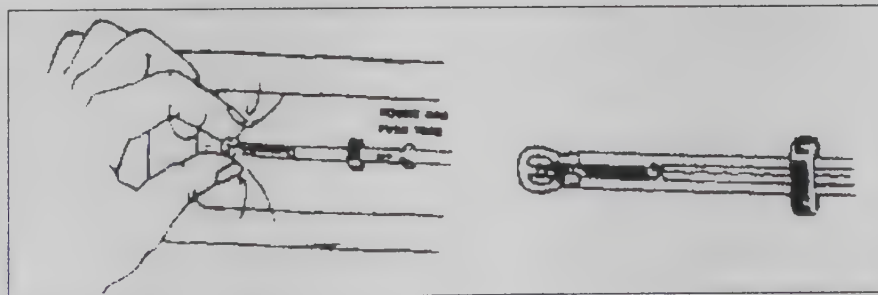


Fig. 3.8

Positioning of IUCD and Bending Arms of T

- VII The blue depth-gauge on the inserter tube is used to mark the depth of the uterus and to show the direction in which the arms of the T will unfold once they are released from the inserter tube.

Holding the blue depth-gauge in place through the clear plastic wrapper, grasp the inserter tube at the open end of the

package with your free hand. Pull (or push) the inserter tube gently until the distance between the top of the folded T and the edge of the blue depth-gauge closest to the T is equal to the depth of the uterus as determined by uterine sounding. Align the depth-gauge and the folded arms of the T in horizontal position (laying flat against the IUD Fig. 3.9)

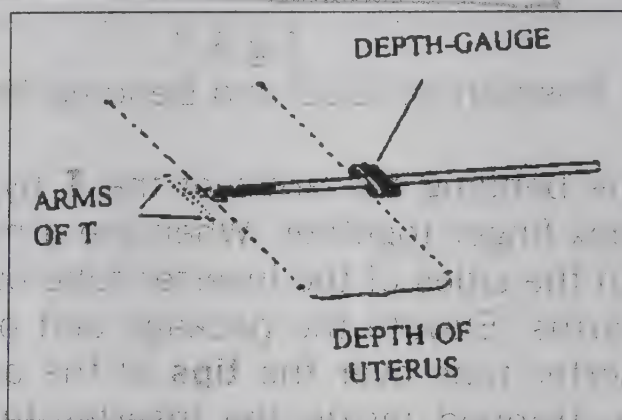


Fig. 3.9

Using blue depth-gauge to mark depth of uterus on inserter tube

VIII. The IUCD is now ready to be placed in the woman's uterus. Carefully peel the clear plastic cover of the package away from the white backing. Lift the loaded inserter tube keeping it horizontal so that the T or white rod does not fall out (Figure 3.10). Be careful not push the white rod towards the T until you are ready to release the T in the fundus. Do not let the inserter assembly touch any unsterile surfaces that may contaminate it.

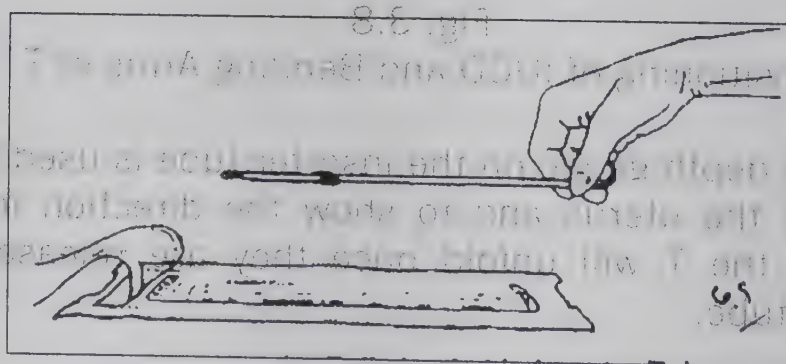


Fig. 3.10

IUCD fully loaded in inserter tube

### 3.8.10 Technique of Insertion

- i) For inserting the IUD you must grasp the Allis forceps/Volsellum and pull firmly downwards and backwards to bring the uterine cavity in line with the cervical canal.
- ii) Gently introduce the loaded inserter with the plunger through the cervical canal upwards till the resistance of the uterine fundus is felt. Be sure that the flange is in horizontal plane.

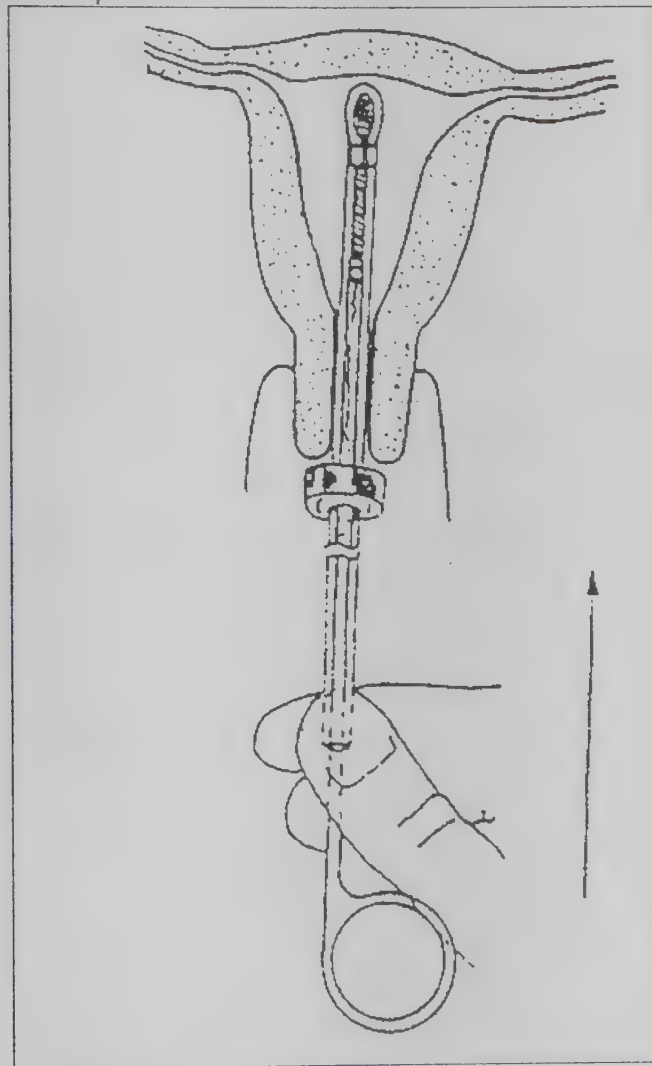


Fig. 3.11  
Withdrawal technique of insertion

- iii) When the loaded inserter reaches the upper end of the uterine cavity hold the plunger in a fixed position and withdraw the

insert the tube downwards till it touches the base of the plunger. This will release the arms of the Cu T in the uterine cavity at the fundus. This is the pull out method to minimize perforation as shown in Fig. 3.12.

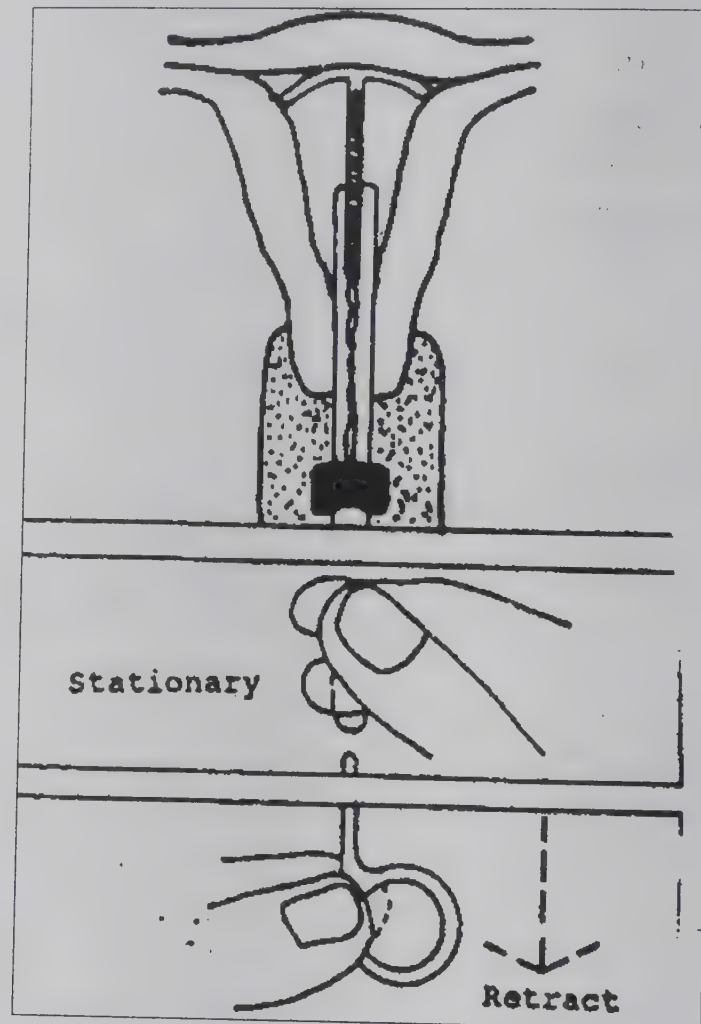


Fig. 3.12  
Pull out method

- iv) Hold the inserter tube firmly, while removing the plunger. The plunger should be removed before the inserter tube is pulled out, otherwise the threads may be caught between the tube and plunger resulting in downward displacement of CuT or expulsion of CuT from uterine cavity.
- v) Gently and slowly pull the inserter tube from the cervical canal. Cut the strings so that they may protrude only 2-3 cms into the vagina. At the completion of the procedure the Cu-T remains



within the uterine cavity. The horizontal (transverse) arms will have slight downward curve due to their flexibility as shown in Fig. 3.12.

- vi) Remove the Allis forceps/Volsellum and see if there is excessive bleeding from the Allis forceps/Volsellum site. You can control it by pressing on the bleeding point with a cotton swab using a clean sponge holding forceps until the bleeding stops. Now you can remove the speculum.
- vii) The client should be kept lying on the table for 5-10 minutes after insertion since occasionally a fainting attack may occur on getting down from the table immediately after the insertion.

### **3.8.11. Care of instruments**

You should instruct the Health Assistant (Female)/health Worker (Female) to take proper care of the instruments. Refer to Unit on Infection Prevention: Unit VII.

### **3.8.12. Post-insertion advice to the client**

- You must tell her that there may be spotting or increased bleeding during menstrual period for the first 3-4 months or so but they tend to become normal thereafter.
- You must advise her that there may be slight bleeding for a week. If the bleeding is more than spotting or normal period then you should tell her to come for check-up.
- If there is any pain or cramping in the abdomen for the first few days, advice tablet paracetamol.
- You should tell her to periodically check the presence of the thread by feeling it but should not pull the string as it might dislodge the IUD.
- If she cannot feel thread or she misses her period, she must report immediately to the PHC.
- In case of any problem she must report to you or the ANM.

### **3.8.13. Follow-up schedule**

You must instruct the ANM that during her routine visits she should advise her client to come for follow-up.

First Visit : Immediately after the first menstrual period.  
Second Visit: After one year.

### **3.8.14. Side effects and complications after IUD insertion and their management**

- **Bleeding**

The most common and important side effect of IUD insertion is bleeding per vagina:

- Spotting in few cases.
- In case of bleeding, do a PV examination to ascertain the cause which may be
  - Infection – Treat the infection.
  - Displacement of Copper T – remove the IUD and call for reinsertion during the next period.
- In case no cause is found, reassure the client and prescribe haematinics.

- **Pain**

- In case of cramps in lower abdomen/low backache give tablet paracetamol.
- In case of severe pain – Remove the IUD immediately.

- **Infection**

- In case of vaginal discharge, pain and fever; give a course of antibiotics.
- If there is no relief – remove the IUD.

- **Perforation**

This is rare following Cu T insertion and is likely in the post abortive/post-partum uteri. Cu T should not be inserted if the uterine size measures less than 6 cms. When string is not seen and Cu-T not felt on uterine sounding, perforation of uterus and intraperitoneal migration of IUD should be suspected. Refer to FRU.

- **Pregnancy**

It is a rare occurrence. In case the client becomes pregnant with Cu T in situ. She may be offered MTP if so desired. In case she wants to continue pregnancy there is no need to remove copper T.

- **Expulsion**

This occurs mostly if the Cu T is inserted in the immediate post-partum period and soon after spontaneous abortion. Avoid inserting IUD at this time. Expulsion occurs mostly in the first year of use (6%) but the incidence decreases to 2% in the subsequent years.

- **Missing IUD string**

When the thread can't be felt by the client and cannot be visualized by you refer to FRU.

- **Ectopic pregnancy**

Ectopic pregnancy is rare and if suspected refer to FRU.

### **3.8.15 Indications for removal**

You must remove the IUD when there is:

- i) Moderate to severe bleeding if no relief with treatment.

- ii) Moderate to severe pain.
- iii) Foul smelling vaginal discharge.
- iv) Pelvic infection not responding to treatment.
- v) The client's desire to have another child.
- vi) Menopause.

### 3.8.16 Technique for removal of IUDs:

- i) Client is positioned as for the insertion of IUD,
- ii) Wear sterile gloves;
- iii) Clean the vulva and vagina with antiseptic solution (Savlon 1%).
- iv) Put the sterile speculum into the vagina, locate the thread; grasp the thread close to the cervix with the sponge holding forceps and pull it out by steady gentle traction.
- v) Show the IUD to the client and discard it.
- vi) If the thread is not seen, refer the client for specialist's attention.
- vii) If the removal requires more than a gentle traction, do not try to remove it but refer her to the specialist at FRU

### 3.8.17 Do's and don'ts about CuT insertion

Do's	Don'ts
I. Explain the safety of the Cu T.	i) Do not insert the CuT if :-
II. Explain the reversibility of CuT.	a) there is a suspicion of pregnancy.
III. Insert the CuT preferably during the last two days of the menstrual period but can be inserted within 7-10 days of L.M.P.	b) menstrual periods are excessive or very irregular.
IV. Use aseptic technique when inserting the CuT.	c) there is any sign of pelvic infection.
	d) history of septic abortion in the last 3 months.
	e) there is suspicion of tumor.
	f) the uterus is less than 6 cms or more than 9 cms.



V.	Uterine sound should be used to measure the length of the cavity of the uterus and the blue flange must be adjusted accordingly.	g) any of the contents of the package become contaminated prior to insertion, discard the package and use a new copper T. Do not keep the Cu T in the inserter for more than five minutes before insertion.
VI.	Pull the plunger completely out of the inserter tube before removing the tube from the uterus.	ii) Do not push the plunger to insert the Cu T.
VII.	Tell the client what to expect and what to do in case of bleeding, pain or expulsion of the Cu T.	iii) Do not remove the plunger and inserter tube together.
VIII.	Reassure the client about mild side-effects.	iv) Do not insist on retention of IUD if it is unacceptable to the client.
IX.	Schedule the return visit.	
X.	Attend sympathetically to every complaint.	
XI.	Maintain complete records.	
XII.	Remove the Cu T after 3 years of continuous use and reinsert a new one.	

### 3.9 Sterilization methods (Sterilization)

Sterilisation is a permanent method of contraception whereby the person is rendered infertile. It involves blocking the duct that carries the egg (ovum) or the sperm. Thus the ovum and sperm cannot meet, so fertilization does not occur and there is no pregnancy.

As you know that sterilisation can be done on the male and female clients.

You have to satisfy certain conditions stipulated by the Government of India before the procedures of sterilization can be performed. These conditions are meant to minimize complications and improve the quality of care.

To your female client you can advise tubectomy, which can be done by.

- Minilap-
- Laparoscopic sterilisation-

The client can undergo tubectomy:

1. Within 7 days after the menstrual period is over.
2. Interval sterilisation should preferably be performed within 7 days after the menstrual period is over (in the follicular phase of the menstrual cycle). However, if the sterilisation is done in pre-menstrual phase, counselling regarding the possibility of existing conception should be ensured.
3. Post-partum sterilisation should preferably be done within 48 hours to 7 days of delivery. However, the procedure may be performed at any other time provided there is no infection or contra-indication.
4. Post MTP/along with MTP: Sterilisation with medical termination of pregnancy (MTP) can be performed concurrently. However, post-MTP tubectomy is not to be done in camp conditions. Sterilisation following spontaneous abortion can be performed with antibiotic coverage and only in the absence of anaemia and infection.

To your male client you can advise vasectomy by either of the two methods.

- Conventional vasectomy
- Non scalpel vasectomy

Healthy clients with no contraindications should be offered surgery as soon as convenient for them.

**Simplest sterilisation procedure with the lowest morbidity, is vasectomy.**

### **3.9.1. Eligibility criteria for female and male**

- The client must be married, and the spouse must be living together.
- The male client preferably be below age 60 year; his wife must be below age 45 years.
- The female client preferably is below 45 year and above 22 years.
- The number of children must not be a criterion for determining the eligibility for sterilisation acceptors. However, it is preferable that the couple should have at least one child with age above one year.
- The client or spouse must not have undergone previous sterilisation. (This condition may be waived in case of failure of the previous sterilisation surgery).
- The client must be in the proper state of mind to understand the full implications of the sterilisation surgery.
- A psychiatrist must certify mentally ill clients and the legal guardian/ spouse should give consent in such cases.

### **3.9.2 Counselling for sterilization**

The following steps must be taken before sterilization client signs a consent application:

- You must present the client with all the methods of family planning, including oral pills, the IUD, spermicides, condoms, and sterilization.

- You must ensure that the client makes informed decision for sterilization voluntarily.
- You must counsel the client in language that he or she can understand.
- You must give the client a clear description of what will happen prior to and during the surgery, including description of the clinical examination, laboratory tests and surgery as well as give information on side-effects and potential complications.
- You must explain to the client that:
  - I. It is a safe and simple procedure.
  - II. It is a permanent procedure for preventing future pregnancies.
  - III. It is a surgical procedure that has a small risk of complications requiring further treatment.
  - IV. It does not affect sexual pleasure, ability, or performance.
  - V. It will not affect the client's ability to carry out normal day to day work.
  - VI. It has a small chance of failure, even if performed under optimum circumstances.
  - VII. After vasectomy it is necessary to use a back-up contraceptive method either for 20 ejaculations or for a period of three months.
  - VIII. Sterilization does not provide protection against RTI/STD or HIV/AIDS.
- The client must be told that reversal of this is possible, but the reversal procedure is a major surgery and its success cannot be guaranteed.

### **3.9.3 Informed Consent**

You must tell the client that they have the option of deciding against the procedures at any time without sacrificing their right to other reproductive health services. After you have explained the details of the procedure to the client, the client



must sign a printed application and consent form for sterilization.

### 3.9.4 Standards for female and male sterilisation

The eligibility criteria, counselling and informed consent as described apply to both male and female sterilization clients.

- **Medical contraindications**

Generally speaking, there are **no absolute contraindications** for sterilization on medical grounds. You should screen the clients thoroughly. You should refer those who are at high-risk of complications to an appropriately equipped facility with personnel trained to deal with their medical or surgical problems. In addition, it is necessary to counsel a couple that the simplest sterilization is vasectomy.

The risk of pregnancy must be weighed against the risk of the sterilization procedure.

The following **relative contraindications** are conditions for which referral, further evaluation, proper counselling, or provision of another contraceptive method is warranted.

- Psychiatric illness (the client must be able to provide informed consent).
- Physical illness.
  - Acute febrile illness.
  - Jaundice or other chronic liver disease.
  - Anaemia with haemoglobin less than 8 gms %
  - Chronic systemic disease, including tuberculosis, bronchial asthma, blood dyscrasias, heart disease, uncontrolled diabetes, hypertension, and thyrotoxicosis.
  - Malignancy.
  - Skin conditions, including infection involving operative site.
  - Pelvic infection, adhesions, or mass.

- Severe nutritional deficiency, such as generalized edema, anaemia, and vitamin deficiency.
  - Bleeding disorders.
  - Continuing pregnancy.
- Multiple scars of previous laparotomy.
  - Allergies to local anaesthesia (alternative anesthesia or procedure must be provided).
  - Obesity that would make surgery difficult under local anaesthesia.
  - Some additional screening considerations apply to post-partum clients. Voluntary sterilization may have to be deferred to the interval period if any of the following conditions are present:
    - Puerperal fever.
    - Prolonged rupture of membranes (More than 24 hours).
    - Pre-eclampsia or eclampsia.
    - Ante-partum and post-partum haemorrhage resulting in Hb less than 8 gms%.
    - Trauma to the genital tract.
    - History of post-partum psychosis.

Skin conditions involving the operative site, such as thickening, infection or oedema, making surgery difficult (local skin infections or genital tract infections) must be treated before surgery is performed.

If there is any question of medical eligibility or need for consultation, you should refer the client to FRU. Alternatively the husband or wife should be counselled for sterilization as the case may be.

**Note:** that anaemic or undernourished women requesting sterilization are in need of such referral services all the more. You should treat the clients for anaemia or malnutrition and then provide sterilization services, or counsel and refer the client's husband for vasectomy.

### 3.9.5. Clinical assessment and screening of clients

For clinical assessment and screening of clients you have to take a careful history and do physical as well as systemic examination followed by investigation.

#### A. History

You should take careful history asking about

- age
- marital status,
- occupation,
- last contraceptive used.

##### i. **Menstrual history:**

Date of last menstrual period (if pregnant, how many weeks?).

##### ii. **Obstetric history:**

- number of pregnancies,
- deliveries (live births and stillborn) and abortions (spontaneous and induced).
- living children of each sex,
- age of youngest child.

##### iii. **Medical history**

You must enquire about any associated medical condition like:

- hypertension,
- anaemia,
- convulsions,
- respiratory problems,
- heart disease, diabetes,

- bleeding disorders,
- psychiatric conditions,
- pelvic or abdominal surgery,
- pelvic inflammatory disease,
- vaginal discharges,
- urinary tract infections,
- allergies to medications,
- immunisation status of woman (for tetanus) of children (for six killer diseases; tetanus, tuberculosis, diphtheria, pertussis, poliomyelitis, and measles),
- addictions (alcohol, smoking, and drugs),
- Current medications.

## **B. Physical examination –**

Physical examination should include noting

- Pulse,
- blood pressure,
- temperature,
- body weight,
- general condition,
- nutritional status,
- auscultation of heart and lungs,
- examination of abdomen,
- pelvic examination;
- other examinations as indicated by client's medical history or general physical examination.

## **C. Laboratory examinations:**

You must advise blood test for haemoglobin, urinalysis for sugar and albumin, and other laboratory examinations as indicated. e.g. pregnancy test.



## **D. Final medical assessment**

After reviewing the clients history, the physical findings and the client's eligibility, you must make final evaluation at the facility where the procedure is to be performed including abdominal and pelvic examination immediately before surgery.

### **3.9.5. Pre-operative instructions:**

You must give the clients the following pre-operative instructions:

- The client must bathe and wear clean and loose clothing to the operation theatre (OT)
- The client must not take anything by mouth 4 to 6 hours prior to surgery.
- On the morning of surgery, she must empty her bowels, and before entering the OT, empty her bladder.
- The client must not wear any jewellery, remove any nail polish, or hairpins to the OT.
- Before entering the OT she must remove eye-glasses, contact lenses, and dentures
- A responsible adult must be available to accompany the client home after the surgery

### **3.9.7 Steps of sterilization procedure:**

You will be taught the steps of the procedure of sterilisation in the specialised skill training.

### **3.9.8 Follow-up of women who have undergone tubectomy**

The clients who have undergone tubectomy have to be followed up. You must inform the health worker female and health assistant female to follow the schedule given below:

- All cases of tubectomy, the clients should be followed up by the H.W. (f) within 48 hours after surgery at their home.

- First follow-up: Seven days after surgery the client is to come for stitch removal, to have the wound examined, and to have questions answered. You must do a pelvic examination if indicated.
- Second follow-up: After one month or after her first menstrual period, whichever is earlier, you must instruct the client to return for a second follow-up check-up. If she has missed her period or is experiencing a menstrual abnormality, she must be examined to be sure she has not become pregnant.
- Emergency follow-up: This can be done at any time after surgery.
- Subsequent follow-up: Visits will occur if the client has any complications or questions.

### **3.9.9. Follow-up of men who have undergone vasectomy**

You must instruct the health worker male and health assistant male to visit the clients who have undergone vasectomy as per the schedule given below:

- In all cases of vasectomy, Health Worker should visit the clients within 48 hours after the operation.
- First follow-up: Seven days after surgery tell the client to come for stitch removal (in conventional vasectomy), to have the wound examined, and to have questions answered. While in NSV cases, the client should be seen after 48 hours of operation.
- Second follow-up : After three months the client should return for semen analysis.
- Emergency follow-up: This can be done at any time after surgery.
- Subsequent follow-up: This can be done at any time after surgery.
- Subsequent follow-up : Visits will occur if the client has any complications or questions
- Consideration can be given for having no required follow-up for clients except when a complication occurs or when the

client's wife becomes pregnant. Post-operative instructions must be clear and complete enough so clients can identify problems.

**Remember to give the following post-operative instructions:**

- a. You must explain to the client that he is not sterile immediately and that he or his wife will have to use another method of contraception for at least 20 ejaculations or for three months (whichever is earlier) following surgery. The client must use condom, if his wife is not using any contraception. He must be told to come to the clinic for semen analysis after 3 months.

He must receive instructions on where to go if complications (such as infection, swelling of the scrotum, fever, increasing pain, bleeding from the wound) arise.

**3.9.10 Complications of female sterilization procedure and their management**

- a. **Menstrual irregularities** (e.g., menorrhagia, scanty period)- Reassurance is all that is needed in most cases and treatment based upon gynecologic need.
- b. **Incisional hernia**- Needs surgical repair. This is a rare complication.
- c. **Chronic pelvic inflammatory disease**: - usually presents as pelvic pain and requires treatment with bed rest, antibiotics, and analgesics.
- d. **Psychological problem (e.g., depression)**- Discussion of the problem, clarification of the role of sterilization, and answering questions are important. Appropriate referral should be given to the patient
- e. **Failure of the operation, leading to pregnancy**- This may be due to recanalisation. The patient should be offered MTP or be medically supported throughout pregnancy. She should be offered repeat surgery as

indicated. In case of ectopic pregnancy early diagnosis and treatment is a must for which she is to refer to FRU.

### **3.9.11 Complications of Male Sterilization Procedures And Their Management**

- Sperm granuloma- Can occur either at the site of vas occlusion or at the site of the epididymis. The majorities of these are symptomless and respond to analgesics and anti-inflammatory drugs. Very occasionally a persistent and painful granuloma may necessitate surgical intervention.
- Psychological problems: - Uncommon, but discussion of the problem, clarification of the role of sterilization, and answering questions are important. Appropriate referral should be given to the patient.
- Failure of Vasectomy- Incidence is quite low, but failure may occur because of technical deficiencies in the surgical procedure or spontaneous recanalisation. The client's wife should be offered MTP or be medically supported throughout pregnancy. You should offer a repeat surgery as indicated to the client.

### **3.10 Health Education/Counseling:**

Follow the steps explained below during the client's first family planning visit or any time the client wishes to change her contraceptive methods.

The important first step to follow are summarized below:

- Greet the client, offer her a seat, make her comfortable, tell your name and ask for her name.
- Establish rapport, show concern, respect privacy and confidentiality.
- Let her get the feeling that you are there to help her.



- Ask what will happen from beginning to the end of the visit.
- Discuss all available methods so the client can make an informed choice.
- Follow procedures for the specific method chosen.

Once the client has chosen any method subsequent steps be as follows:

**STEP I** Discuss the client's past experience with the method. If she has no past experience with the method, discuss and clarify any rumors or mistaken ideas the client may have about the method.

**STEP II** Explain in details what the method is and how it works. If appropriate, a sample can be provided. She may examine it and handle it. Encourage her to ask questions or any clarification about any information you have provided.

**STEP III** Describe the advantages and disadvantages of the method both contraceptive and non-contraceptive. Encourage her to move doubts about disadvantages.

**STEP IV** Explain the appropriateness of the method for the client through history and physical examination.

After history and examination, if the method is not appropriate, inform her why the method is not appropriate for her. Help the client make an informed choice of another appropriate method.

**STEP V** Explain the instructions to the client for use of the method. Encourage repeating the instructions in

their own words. If she has misunderstood or omitted any instruction, go over the information again with her.

**STEP VI** Plan for the return visit. Explain and schedule the next visit. Remind client about warning signals and tell them to return sooner than planned in case of presence of warning signals.

**STEP VII** Follow procedures for the return visit:

Ask during the follow up visit, whether they are happy with their chosen method.

- For satisfied clients, ensure that the instructions are followed correctly for the use of the method.

- ✓ Remind warning signals again.
- ✓ Dispense supplies where appropriate.
- ✓ Plan for next return visit.

- For dissatisfied clients, manage the side effects as necessary or remove the method and help the client to make an informed choice of another method.

### **3.11 Monitoring/Reporting :**

To be done for Oral Pills, Cu-T, and Sterilization as per formats

**Key points:**

- Planning requirement for contraception based on birth rate, parity and number of previous users (Condom, OCP)
- Too early, too late, too many pregnancies are cause of high maternal and neonatal morbidity and mortality rates.
- Counseling for appropriate contraceptive method is crucial for success of the programme.
- Benefits and risks of each contraceptive method should be explained to the client.
- Management of logistics & supplies for family planning.
- Danger signals to be explained to the client.
- Follow up of the family planning acceptors is necessary.
- Reporting services accurately and completely as per the formats.

**3.12. Self-assessment questions**

13. What are the advantages of Condoms?
14. What are the advantages of Oral pills?
15. What are contra-indications of IUCD?





## Unit-4

# ***PREVENTION AND MANAGEMENT OF REPRODUCTIVE TRACT INFECTIONS/SEXUALLY TRANSMITTED INFECTIONS***

### **LEARNING OBJECTIVES:**

At the end of this unit, you should be able to:

- define RTI/STI.
- identify individuals with symptoms of RTI/STI.
- list causes and their clinical manifestations.
- assess the woman clinically.
- perform and advice appropriate investigation.
- institute treatment to create awareness of RTI/STI.

### **CONTENTS :**

- 4.1 Introduction
- 4.2 Identify individuals with symptoms of RTI/STI
- 4.3 Etiology of RTI and their effects
- 4.4 Importance of partner identification and prompt referral
- 4.5 Clinical screening for RTI/STI
- 4.6 Perform and advice appropriate investigation
- 4.7 Flow charts on various STI
- 4.8 Complication and sequel
- 4 9 Counselling/health education to prevent RTI/STI  
including HIV/AIDS

- 4.10 Methods of infection control for prevention of infection amongst health personnel
- 4.11 HIV/AIDS
- 4.12 Self assessment questions

#### **4.1 Introduction**

You must be aware that the annual incidence of RTI/STI in India is estimated at 5%, approximately 40 million of new infections take place every year.

- RTI are common even among asymptomatic population and low risk individuals e.g., FP/ANC attendants.
- Among high-risk behaviour groups e.g. commercial sex workers, men in occupations involving extended separation.
- Patients with chlamydial infections and bacterial vaginosis, despite their potential role in RTIs, remain largely ignored causes of reproductive morbidity.

As you know Reproductive tract infection (RTI) is an infection of the genital tract. The infection can affect vulva, vagina, cervix, uterus, tubes and ovaries in the woman. Infection of uterus and the tubes is known as Pelvic Inflammatory Disease (PID) which can occur even without producing symptoms. PID can result in infertility. In severe cases of PID the infection can spread to abdominal cavity leading even to death of the woman.

Sexually Transmitted Infections (STI) occur following sexual intercourse with the infected person, which results in genital ulcers and discharges. Untreated they can be a cause for spread of HIV/AIDS in the community.

Presence of RTI/STI in any person may result in flare-up of infection following insertion of IUD. Therefore insertion of IUD in such patient is contra-indicated. In pregnancy the foetus may be affected by these infections. They may also be a cause for development of cervical cancer.

Reproductive tract infections is a generic term that covers four types of infections.

- a. Sexually transmitted diseases.
- b. Infections that result from overgrowth of organisms normally present in the reproductive tract.
- c. Iatrogenic infections i.e., infections associated with medical procedures including abortions, IUD insertions etc.
- d. Infection following vaginal delivery, spontaneous abortion, requiring surgical intervention.

#### 4.2. Identify individuals with symptoms of RTI/STI:

You should suspect RTI/STI in a woman who seeks health care for:

- Vaginal discharge with or without itching.
- Genital ulcers.
- Lower abdominal pain.
- Backache.
- Woman whose husband/sexual partner has problem of urethral discharge with burning during urination or ulcers on genitals.

#### 4.3. Etiology of RTI and their effects:

Infections	Acute Disease	Chronic Disease
Neisseria gonorrhoea	Urethritis, Cervicitis, Salpingitis	Infertility, PID
Chlamydia trachomatis	-do-	-do-
Treponema pallidum	Primary and Secondary Syphilis	Neurosyphilis, CV Syphilis
H. ducreyi	Genital ulcer	-
M. Hominis	Bacterial vaginosis	-
Gardenerella vaginalis	-do-	-
HIV	Mono-nucleosis	AIDS
HPV	Genital warts	Cancer
HSV-2	Genital ulcer	Recurrent

		genital herpes
HBV	Acute hepatitis	Cirrhosis, Hepatoma
Trichomonas vaginalis	Vaginitis , Urethritis	-
Candida albicans	Vaginitis	-

#### **4.4 Importance of partner identification and prompt referral**

As you know all the STIs are transmitted from an infected partner. You must remember that the treatment of the individual is not sufficient unless and until her partner is treated simultaneously. Many a time their male sexual partner may not be having any manifest symptoms like ulcers or urethral discharges or any other complaints.

It is important that the affected sexual partner gets properly diagnosed and treated. This will prevent continuance and spread of infection in the sexual partners.

#### **4.5. Clinical screening for RTI/STI**

##### **4.5.1. Client assessment**

You must be familiar with the clinical problems associated with sexually transmitted RTIs. Some clients are asymptomatic and have little or no suspicion that an infection is present. Others will have symptoms and request an evaluation. It is important to identify correctly those clients with RTIs, whether they are symptomatic or not. You must screen all the clients with history followed up by an clinical examination. For those answering "Yes" to any of the RTI screening questions, further evaluation, as described below, should be undertaken.

##### **4.5.2. History taking**

If a woman complains of vaginal discharge, proceed as follows to ask:



- a. When did the discharge start?
- b. Whether the sexual partner has any sore on the genital organ or urethral discharge?
- c. What is the nature of discharge i.e. whether watery, sticky and clear, purulent, curd-like, yellow, or greenish and frothy, bloodstained or foul smelling and whether it is scanty or profuse?
- d. Whether the woman is pregnant or whether she has recently delivered or had an abortion?
- e. Whether the woman is using Cu T?
- f. Whether she has burning micturition, or itching in the vulva?
- g. Does she have pain in lower abdomen which increases during menstrual period?
- h. Does she have any ulcer in the genital region? (Presence of vulval ulcers can be confirmed by looking at the vulva.)

Vaginal discharge is a common complaint in women. It may be caused by any of the following conditions:

1. **Physiological** : During ovulation, just before menstruation or during pregnancy. At these times the discharge is mucoid, not blood stained, or foul smelling and not associated with itching of the vulva.
2. **Candidial infection (thrush)**: This appears as curdlike, white patches on the vaginal mucosa accompanied by thick, curdy white discharge and itching at the vulva. This infection occurs commonly during pregnancy.
3. **Parasitic infestation (trichomonal vaginitis)**: This may be transmitted during sexual intercourse or by contact with contaminated articles. It is characterized by greenish yellow, frothy, foul smelling discharge accompanied by itching and redness of the genital area.
4. **Gonorrhoea**: This is a sexually transmitted disease. In women it is characterized at times by purulent discharge from the cervix and urethra but this may be mild and may pass unnoticed. These women may develop salpingitis at a later

stage and may complain of pain in the lower abdomen and fever. Untreated gonorrhoea may result in infertility in women.

5. **Puerperal/Post/abortal sepsis:** This is an infection of the genital tract, which occurs following delivery or after an abortion. It can be prevented by taking proper aseptic precautions during delivery/abortion. Puerperal sepsis is characterized by high fever, headache, low abdominal pain and foul-smelling, purulent vaginal discharge.
6. **Following IUD insertion:** This may be found quite often. The discharge is profuse and watery and usually subsides after the first menstrual period following insertion.
7. **Cancer cervix:** This generally occurs in older women. In the early stages, it is characterized by watery discharge, which later becomes bloodstained and foul smelling. The woman usually complains of irregular vaginal bleeding in between periods or vaginal bleeding following sexual intercourse.

- **Supplementary RTI History**

Remember to obtain supplementary information about the following items:

- A description of relevant symptoms, if any.
- Onset, duration, and progression.
- Relationship of symptoms to sexual intercourse for deciding the incubation period.
- Urinary symptoms.
- Prior history of similar symptoms.
- Similar symptoms in a sex partner.
- History of a prior RTI, including dates, diagnosis and treatment if known.
- Recent sexual history.
- Time since last sexual exposure. Was this a regular, casual or new partner?
- Number of partners in past three months.
- Pain or bleeding during intercourse.

- Use of condoms.
- Medication history.
- Hormonal contraceptives (pills, injectables or Norplant).
- Recent antibiotic use.
- Drug allergies or sensitivities .
- Other current medication.

### **4.5.3 Physical examination**

#### **4.5.3.1. Female examination**

Do a complete RTI examination on all those women who respond yes to one or more questions in history.

Instruments required are :

- Vaginal speculum (Sim's)
- Cotton swabs
- Swabs stick for urethral/cervical smear
- pH paper
- Glass slides with cover slips 10 % KOH and saline solutions
- Microscope
- Reagents for Gram's staining

You must remember that when performing a RTI screening examination.

- To ask her to empty her urinary bladder.
- To assure privacy at all times.
- To inspect the perineum, vulva, vagina, and cervix carefully in order to obtain qualitative information to support the diagnosis of infection.
- To use appropriate sampling techniques to maximize the chance of identifying and existing infection.
- To be sure you are thoroughly familiar with the signs and symptoms of the specific RTIs.

## Examination :

- i. Inspect and palpate for tender mass in the abdomen.
- ii. Vulval inspection and palpation.
  - Put clean gloves on both hands (If gloves are reusable, make sure they have been decontaminated and cleaned after each use).
  - Inspect thighs for rashes and lesions.
  - Palpate groins for enlarged and/or tender nodes.
  - Inspect pubic area for pubic lice, sores, and nodes
  - Inspect vulva, perineum and perianal skin for rashes, sores, warts, and swellings.
  - Inspect labia and urethral opening for lesions or discharge (Skene's glands) and palpate the Bartholin's glands.
  - Note the color, smell and characteristics of any discharge and take specimens for testing (without using Dettol cream/antiseptic solution or doing toilet of vagina).
- iii. Speculum examination

A good light source is essential.

- Gently insert the bivaive/Sim's speculum into the vagina, and inspect the vagina for redness (erythema), discharge and ulcers or warts. Use a cotton swab to obtain a sample of any vaginal discharge or pH and for the normal saline and KOH wet mounts (microscopy).
- Look at the cervix and check for any anomalies such as bright red cervix which bleeds easily (friable) or mucopus in the cervical os.
- The face of cervix (exocervix) should be cleaned of all vaginal secretions, using a large cotton swab such as those used for proctoscopy. At this time, an endocervical sample should be obtained for Gram stain if there is mucopus or if the cervix is friable.



iv. Bimanual examination

Carefully and gently palpate the vaginal walls, cervix, uterus, and adnexa to identify the presence of upper genital tract tenderness, which could be suggestive of pelvic inflammatory disease.

v. Perform a rectovaginal examination if :

The findings on bimanual examination are confusing (e.g., position or size of the uterus is not confirmed).  
The uterus is retroverted (posterior-directed).  
Cul-de-sac tenderness or a mass is noted on bimanual examination.

#### 4.5.3.2. Male examination

Ask the client to undress from the chest down to the knees.

**Remember** : Always wear clean gloves on both hands. The only equipment needed are:

- Swab stick for obtaining urethral smears
- Glass slides with cover slips
- Saline
- Microscope

#### Inspection

Examine the client in good light. Look at the:

- External genitalia: Carefully examine to detect the presence of genital lesions (ulcers or blisters) or enlarged lymph glands in the groin or genital area. If lesions are seen, one should note their location and character, and test as indicated.
- Pubic hair-inspect for pubic lice and nits. If any suspicious lesions are noted, test as indicated.

- Skin: Check skin over the thighs, buttocks, and around anus. Note lesions, vesicles, rashes.
- Anal region: Check for condyloma acuminata, ulcers etc.

#### 4.6. Perform and advise appropriate investigation

If facilities are available advise the following investigations.

Supportive laboratory tests for the vaginal specimens are described as follows:

1. A Whiff test is conducted to detect the release of the fishy amine-like odor characteristic of bacterial vaginosis upon addition of KOH to the vaginal smear.
2. The pH is measured by using a color-fast indicator stick. Normal vaginal fluid has a pH between 4 and 4.5. Bacterial vaginosis usually raises the pH above 4.5. In candidiasis the pH of the discharge is usually less than 4.5. Trichomoniasis discharge usually has a pH of more than 5.0. Blood in vaginal secretions or pregnancy may also make the pH greater than 4.5.
3. Direct microscopic examination of a wet mount of vaginal secretions is conducted to identify motile Trichomonas, budding yeast cells and clue cells. For this, a sample of the vaginal discharge is collected from the posterior fornix [or cervix] with cotton tipped swab. Sample is placed on a glass slide and quickly diluted with a drop of physiological saline. A cover slip is applied and preparation is examined immediately under low power with reduced illumination. The characteristic microscopic appearance for the different infections includes:
  - **Trichomoniasis** : typical jerky motility. These are clear, pear shaped organisms about the size of a pus cell with four anterior flagellae. The organisms soon lose their jerky movement.

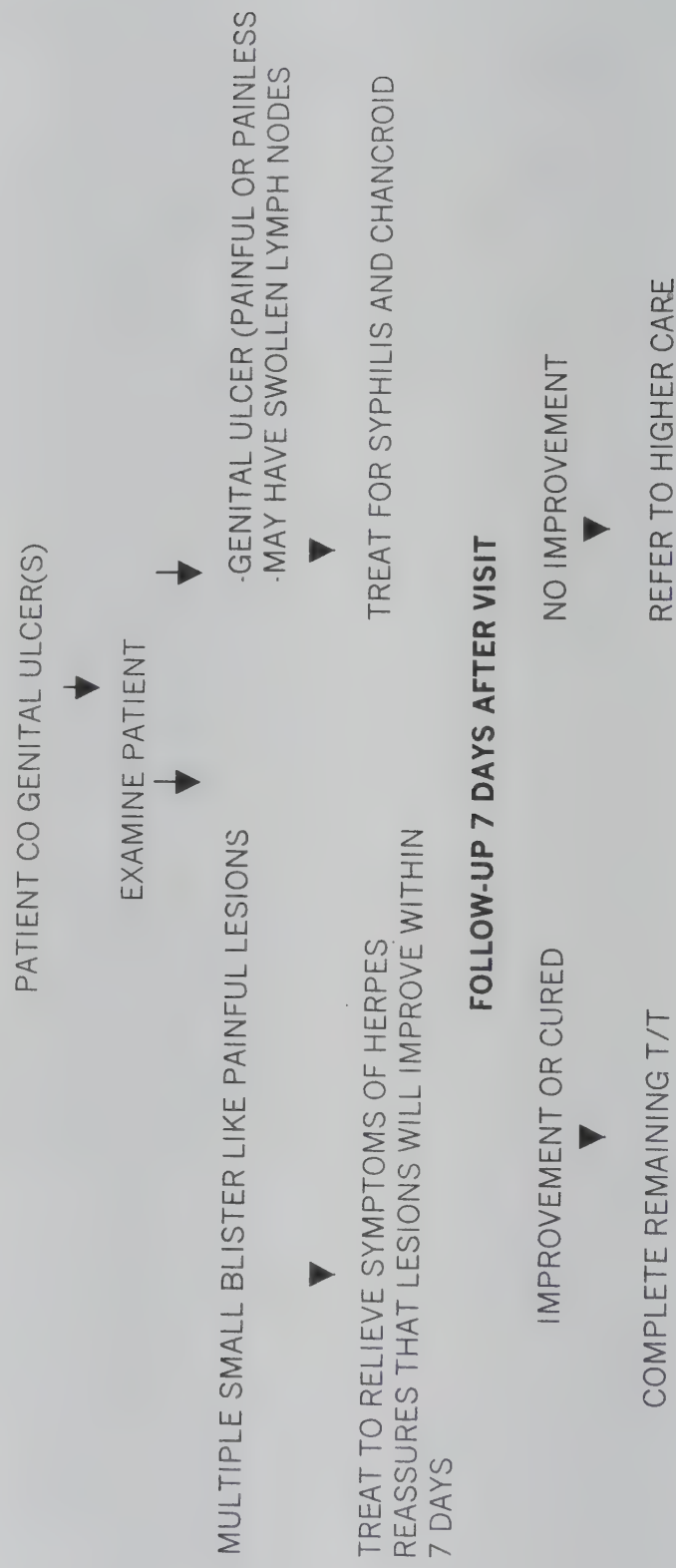
- **Bacterial vaginosis** : Clumps of epithelial cells may be present. Cell outline is indistinct and resulting into a distinct granular appearance [ clue cells ].
  - **Candidiasis** : Yeast cells may be seen as double walled refractile bodies with a size of more than 10 microns. Oval shaped. Some cells show budding halos.
4. Direct microscopy with gram's staining : Slides are examined under oil immersion lens. Gonococci are gram-negative kidney shaped diplococci. Presence of these diplococci with polymorphonuclear leukocytes is highly specific of gonorrhoea.

#### 4.7 Flow Charts on various STI

The following Flow charts will help you to manage the various sexually transmitted infections (STI) keeping in mind the syndromic approach.

i). Genital Ulcers ii). Urethral Discharge iii). Vaginal Discharge iv). Inguinal Bubo v). Lower Abdominal Pain in the female (PID)

##### GENITAL ULCER/TREATMENT AND FOLLOW-UP





## SYNDROMIC TREATMENT OF GENITAL ULCER

### SYPHILIS

INJ. BENZATHINE PENICILLIN G (2.4 M.U.)

-I/M STAT AST.

OR

INJ. AQUEOUS PROCAINE PENICILLIN G (1.2 M.U)

-I/M OD X 10 d

OR

### FOR PATIENTS SENSITIVE TO PENICILLIN

TAB. DOXYCYCLINE 100 mg -1 BD X 15 d

OR

CAP TETRACYCLINE 500 mg -1 QID X 15 d

### FOR PREGNANT WOMEN SENSITIVE TO PENICILLIN

TAB. ERYTHROMYCIN STEARATE 500 mg-1 QID X  
15 d

### CHANCROID

TAB. ERYTHROMYCIN 500 mg-1 QID x 7 d  
OR

TAB. CIPROFLOX 500 mg -1 STAT

INJ. CEFTRIAZONE 250 mg-I/M STAT

### HERPES SYMPTOMATIC THERAPY

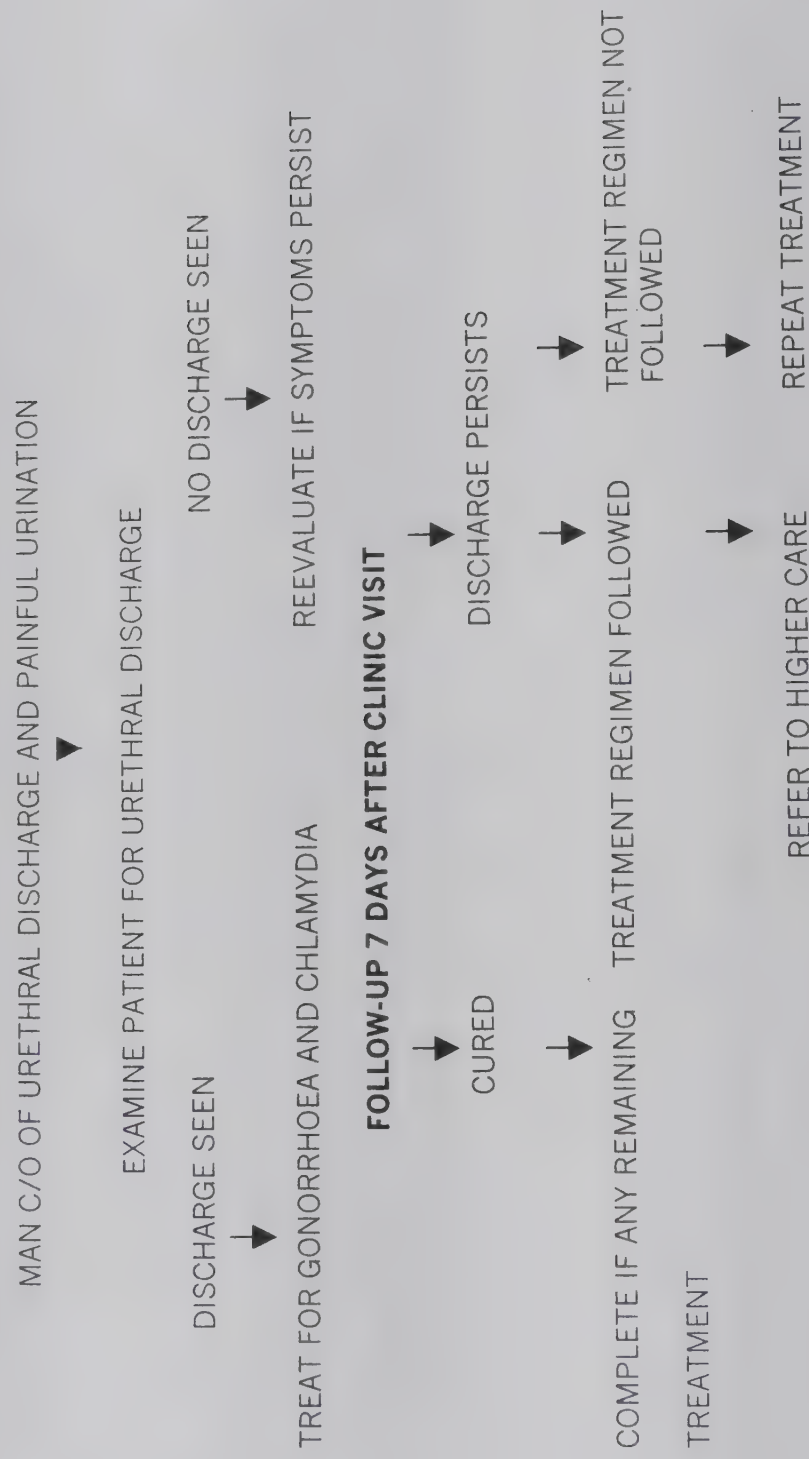
-WASH REGULARLY (SOAP & WATER)  
-1st EPISODE

TAB. ACYCLOVIR 200 mg -5 TIMES/d X 7 d

-RECURRENT EPISODE

TAB. ACYCLOVIR 200 mg-5 TIMES/d X 5d

# **STD -SYNDROMIC DIAGNOSIS** **URETHRAL DISCHARGE/TREATMENT AND FOLLOW -UP**

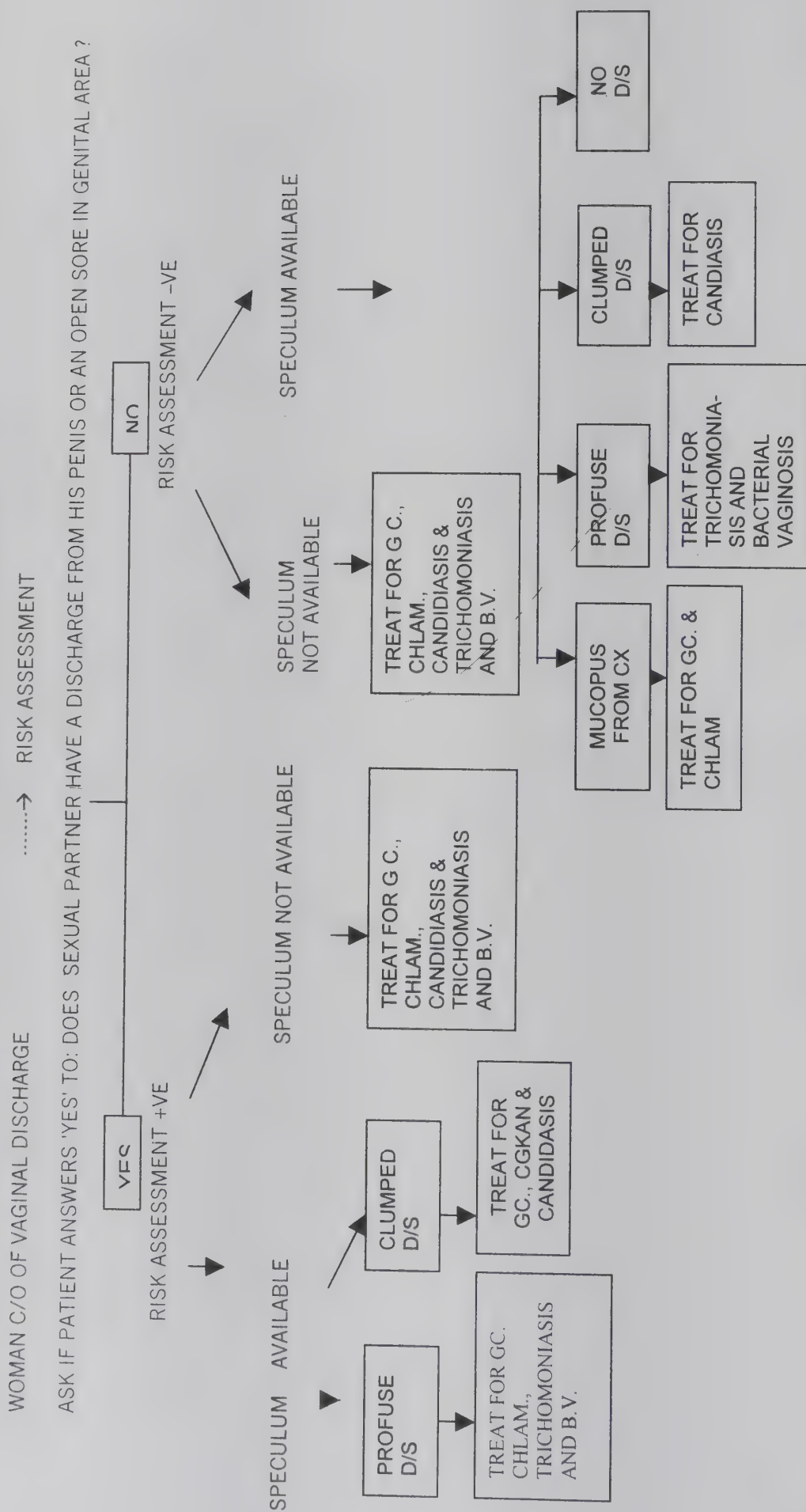


## SYNDROMIC TREATMENT OF URETHRAL DISCHARGE

<u>GONORRHOEA</u>	<u>CHLAMYDIA</u>
TAB. CIPROFLOXACIN (500 mg) · 1 STAT	TAB. DOXYCYCLINE (100 mg) · 1 BD X 7 d
OR	OR
TAB. CEFIXIME (400 mg) · 1 STAT	CAP. TETRACYCLINE (500 mg) · 1 QID X 7 d
OR	OR
INJ. CEFTRIAXONE (250 mg) · I/M STAT	TAB. ERYTHROMYCIN (500 mg) · 1 QID X 7d
OR	
INJ. KANAMYCIN (2 g) · I/M STAT	

TETRACYCLINE, DOXYCYCLINE AND CIPROFLOXACIN CONTRADICATED INDICATION IN PREGNANCY AND LACTATION

# STD -SYNDROMIC DIAGNOSIS VAGINAL DISCHARGE/TREATMENT AND FOLLOW-UP



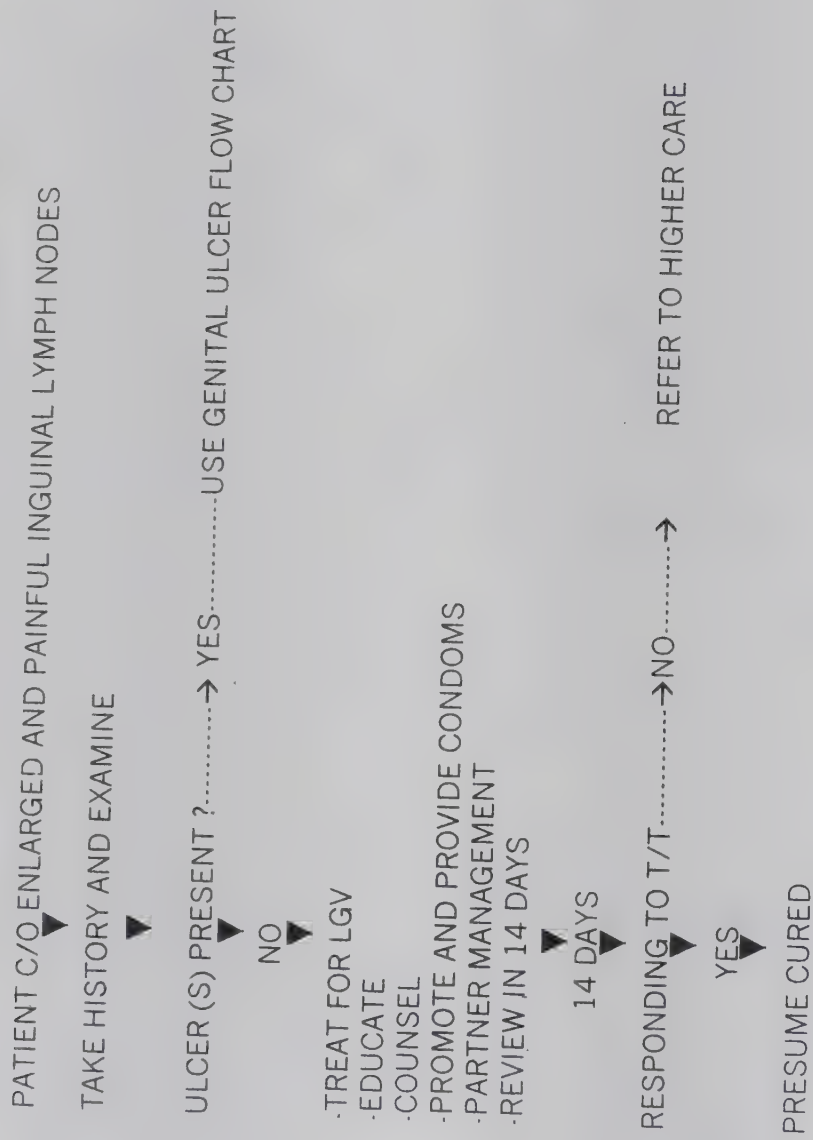


## SYNDROMIC TREATMENT OF VAGINAL DISCHARGE

CERVICAL DISCHARGE ON SPECULUM EX	VAGINAL DISCHARGE OF SPECULUM EX
<u>IN CASE OF CERVICITS (BOTH FOR GCC &amp; NGU)</u>	
TAB. CIPROFLOXACIN 500 mg.1 STAT.	TAB. METRONIDAZOLE 400 mg.1 TDS X 7d
AND	AND
TAB. DOXYCYCLINE 100 mg.1 BD x 7d	TAB MICONAZOLE (INTRAVAGINALLY 200 mg)
OR	OR
INJ. CETRIAXONE 250 mg-I/M STAT	TAB. CLOTRIMAZOLE- OD X 3d
AND	OR
TAB. AZTHROMYCIN 250 mg.4 TABS (1g)	TAB. CLOTRIMAZOLE 500 mg INTRAVAGINALLY
OR	OR
TAB. ERYTHROMYCIN 500 mg.1 QID X 7d	TAB. FLUCONAZOLE 150 mg .1 STAT

METRONIDAZOLE C/I IN FIRST TRIMESTER OF PREGNANCY

**SEXUALLY TRANSMITTED DISEASES**  
**PAINFUL INGUINAL LYMPH NODES (Inguinal bubo)**



## **SYNDROMIC TREATMENT OF INGUINAL BUBO**

TAB. DOXYCYCLINE 100 mg ·1 BD X 14 d  
OR  
CAP. TETRACYCLINE 500 mg ·1QID X 14 d  
OR  
TAB. ERYTHROMYCIN 500 mg·1 QID X 14 d INCISION IS CONTRA INDICATED  
FLUCTUANT BUBO SHOULD BE ASPIRATED EVERY  
nd OR 3<sup>rd</sup> DAY TILL DRY

## **SYNDROMIC TREATMENT FOR P.I.D.**

(GONORRHOEA + CHLAMYDIA + ANAEROBIC INFECTION)

ONLY IF PATIENT IS ABLE TO TAKE FOOD AND LIQUID, IS MOBILE AND ABLE TO TAKE HER MEDICATION. IF NOT, REFER TO HIGHER LEVEL CARE.

### GONORRHOEA

TAB. CIPROFLOX 500 mg·1 STAT

OR

INJ. CEFTRIAXONE 250 mg·1/M STAT

TAB. CEFIXIME 400 mg· 1 STAT

TAB. COTRIMOXAZOLE·10 TABS OD X 3 d  
THEN 2 TABS BD X 10 d

### PLUS TREATMENT FOR CHLAMYDIA

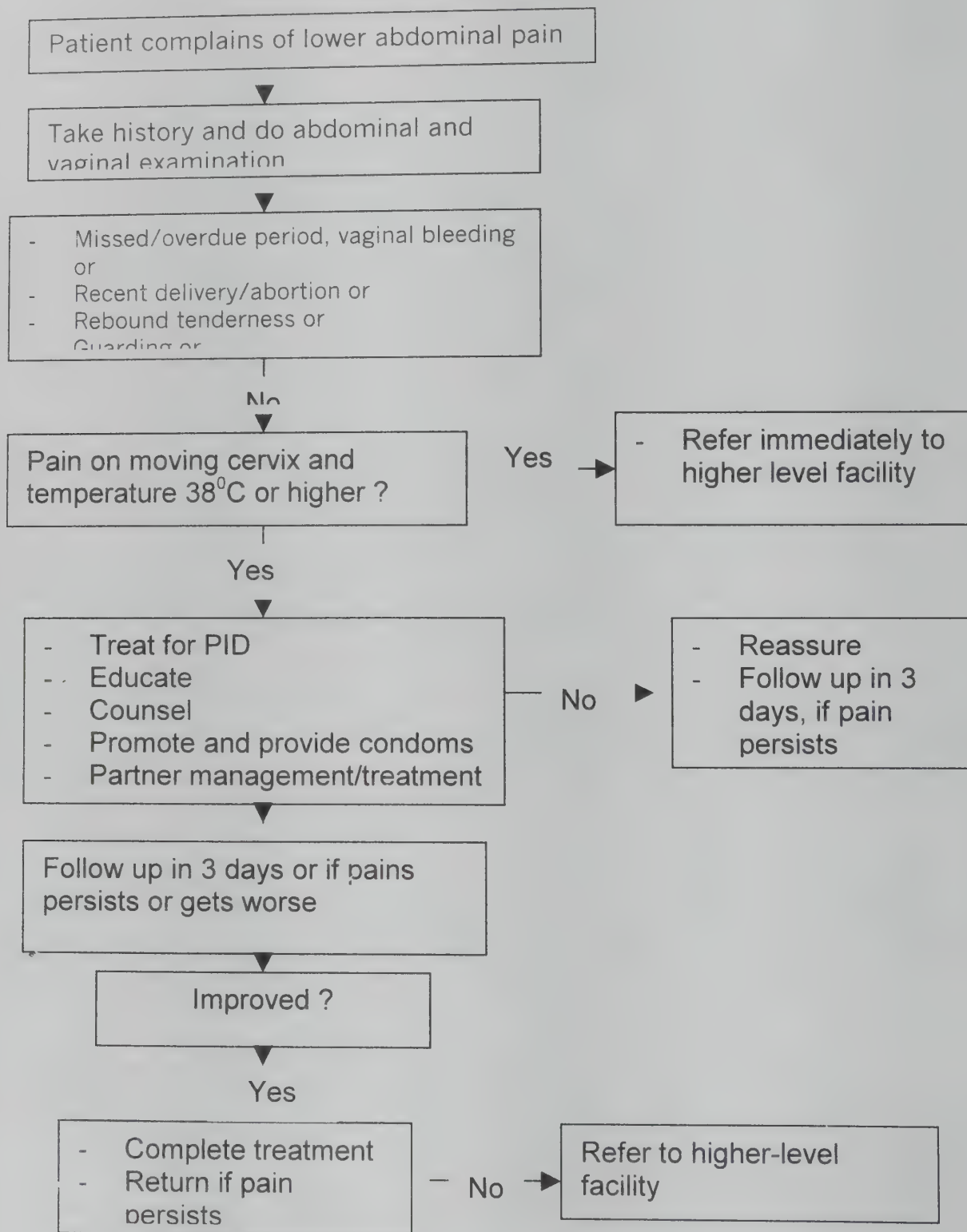
TAB. DOXYCYCLINE 100 mg·1 BD X 14 d

CAP. TETRACYCLINE 500 mg·1 QID X 14 d

PLUS TREATMENT FOR ANAEROBIC INFECTION

TAB. METRONIDAZOLE 400 mg ·1 BD X 14 d

## Flow –Chart Lower Abdominal Pain in the Female





**4.8. Complication and sequel:** You must be aware that RTI/STI can have far fetching complications:

- a. Infertility : Resulting from scarring of the fallopian tube due to Gonorrhoea, Chlamydia and possibly Bacterial vaginosis.
- b. Ectopic Pregnancy : Resulting from incomplete occlusion of the tubal lumen.
- c. Cervical cancer : Precursor being the HPV virus.
- d. Adverse outcome of pregnancy : Spontaneous abortion, still births, low birth weights, premature deliveries or IUGR, congenital or perinatal infection including potentially blinding eye infection, infant pneumonia and mental retardation.
- e. HIV transmission : Presence of STIs has been found to facilitate the acquisition and transmission of HIV infection. A 10 fold risk is associated with infections that cause genital ulceration, otherwise the risk is 4 per cent.

**4.9 Counselling/Health education to prevent RTI/STI including HIV/AIDS:**

As you know counselling means providing the individual with information with regard to her ailment and empowering her to take her own decisions. You must communicate to the individual the information on one to one basis, maintaining the confidentiality of the information received or given in a non-judgemental or non-moralistic manner.

You must remember that counselling of the individual is important in the context of preventing the spread of RTIs/STIs, HIV and AIDS.

Health education is providing general information to the individual, family or community at large with regard to RTI/STI including HIV/AIDS.

Counselling/Health education should include providing information with regard to protective measures on:

- Single mutually faithful sexual partnership.
- Avoiding sexual contact if any of the sexual partners is having RTI/STI.
- Correct condom usage.
- Ensuring complete treatment of self and sexual partners and message to stay cured of RTIs/STIs.
- Maintaining proper menstrual hygiene by use of clean pads/cloth, frequent change of the cloth.
- Observing aseptic precautions during delivery/abortions and utilising the available ante-natal and intra-natal and M.T.P. services.
- Protecting your baby against the effect of RTI/STI by attending ante-natal clinic regularly.

Refer to Block on Communication.

### Awareness for RTI/STDs

You should tell your clients that

- **Cure your infection:** Take all your medication as instructed even if symptoms disappear or you feel better. The symptoms may come back if you do not take all the medication.
- **Do not spread the infection:** Do not have sex again until you take all your medication as directed and you have no more symptoms. If you do not wait, you may give the STD to your sexual partner. Also do not have sex again till your partner is treated. If you do not wait until your partner is treated, you may get the infection again from your partner. If you must have sex, use condoms.
- **Help your sexual partners get treatment:** Tell them to come for treatment or else bring them for treatment.
- **Come back and make sure you are cured:** If you still have symptoms, you can get more medicine to cure your infection.
- **Stay cured with condoms:** Always use condoms with any occasional partner. If using condoms is not possible, using

- spermicides provides some protection. Discuss the use of condoms for risk reduction, issue free condoms if feasible.
- **Keep safety by staying with just one sexual partner:** If you have sex with several people, there is more risk that one may have an STD and infect you.
  - **Protect yourself against AIDS:** Explain to the patient the association between STD and HIV and that it is the same risk behaviour that is responsible for acquisition of these two conditions. Educate the patient on methods of risk reduction through safer sex. No HIV testing should be done routinely in STD patients. Testing only after obtaining consent and pre and post test counselling. There should be guarantee of confidentiality.
  - **Protect your baby – ask your wife to attend ANC during pregnancy :** Go or send your wife to an antenatal clinic within the first three months of pregnancy for a physical exam and syphilis test.

#### **4.10 Methods of infection control for prevention of infection amongst health personnel:**

You must remember that the following methods will help you to prevent spread of infection.

- Hand washing with soap under running water for 10-15 seconds.
- Wear gloves in both hands.
- Proper decontamination and disinfecting of the instruments, gloves and linen. All the things can be decontaminated by dipping in bleaching powder solution [1 Tablespoonful (10-15gm) in 1 litre of water (0.5%)] for 10 minutes.
- Sterilisation of the instruments by autoclaving or boiling for 20 minutes.
- Wipe all the contaminated surfaces with 0.5% Chlorine solution.
- Disposal of waste material. Waste should be buried or burnt. It should never be left outside or left open in pits.

### Key points

- Identify the women with RTI/STI.
- Refer the women for examination and treatment to MO PHC promptly.
- Identify sexual partners and ensure their treatment.
- Provide counselling/health education to individuals, sexual contacts, family and community.
- Observe infection prevention measures to prevent infection amongst the health personnel.

## 4.11 HIV/AIDS

The growing evidence available from all over the world undoubtedly indicates that the incidence of HIV infection is higher in conditions related to STD. India has a high incidence of STDs, 5% of all infections. Thus an average 40 million new cases are reported every year. An estimated 3-4% of rural population are suspected to be having STD. In Mumbai alone HIV infection was found in 50% sex workers and 36 % in STD patients. STDs particularly those characterised by genital ulcers increase the chance of HIV infection. Therefore a person already having STD has the greater risk of acquiring HIV from sexual intercourse if he/she comes in contact with an infected partner. Only 5-10% of people suffering from the disease attend public STD facilities. Majority choose to seek clinical assistance from various other formal as well as informal sources, sometimes even resorting to self medication.

**4.11.1 Epidemiology of AIDS in India :** A large number of AIDS patients are in the reproductive age group. As shown in the diagram Fig. 4.1. Male members have higher incidence Fig. 4.2.



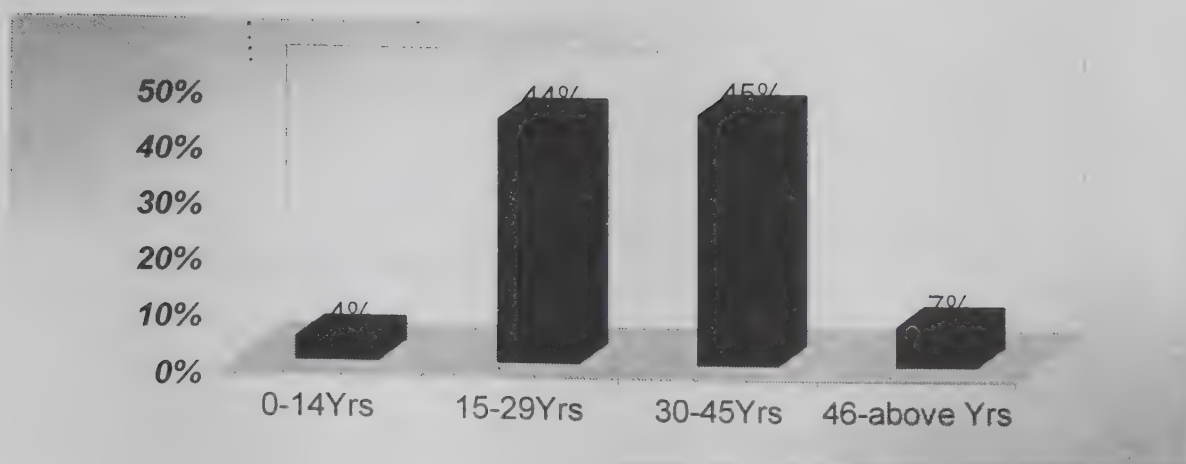


Fig. 4.1.

Age distribution of AIDS cases



Fig.4.2.

Sex distribution of AIDs cases

There are three modes of HIV transmission: -

1. Sexual transmission.
2. Blood transmission (Blood, Blood Products, Infected needles or instruments).
3. Vertical transmission (Placental i.e., maternal to foetal).

The commonest mode of spread of the diseases is by the sexual transmission. Fig. 4.3. Among the probable source of HIV transmission in our country heterosexual promiscuity constitutes the

major route as almost 75 % of HIV infection occur due to unprotected and multipartner sexual contacts. It can be prevented by consistent use of good quality condoms.

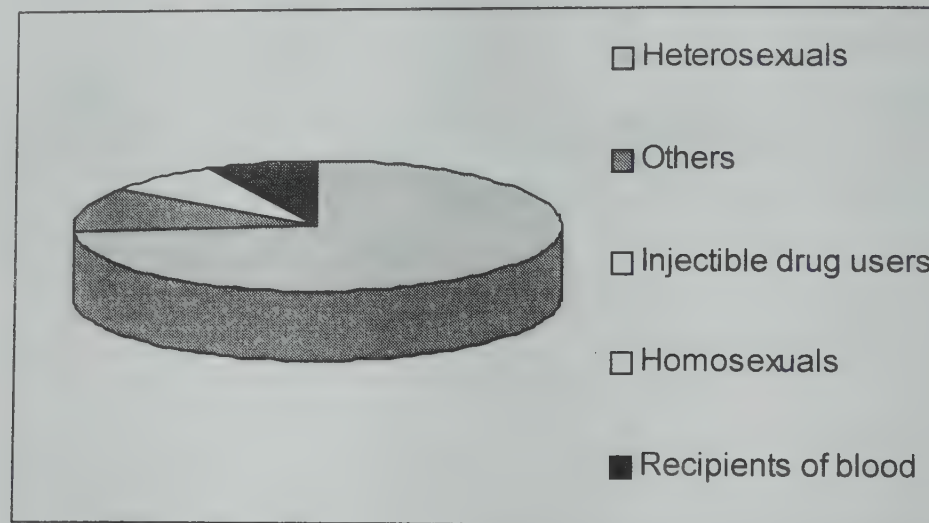


Fig. 4.3  
Probable source of infection

High concentration of HIV is found in

- Blood
- Semen
- CSF of infected individuals

Lower concentration of HIV is found in

- Tears
- Saliva
- Breast milk
- Urine
- Cervical discharge
- Vaginal secretion
- Brain tissue
- Lymph node
- Bone marrow
- Skin

You have to dispel the misconception about the mode of transmission

HIV is not transmitted by

- Mosquito bites
- Any other insect bite
- Casual contact with infected persons
- Within households
- Sharing same food, water, clothes, toilet
- Professional contact ( health worker)

#### **4.11.2. Prevention and control of AIDS/HIV**

HIV infection can be prevented by :

- Avoiding indiscriminate sex.
- Using condoms.
- Having single mutual faithful sexual relationships.
- Avoid sharing razors.
- Avoid sharing tooth brushes.
- Precautions to IV drug users (Should not use same needles and syringes.
- If woman is infected than use of contraception is advised to avoid pregnancy.
- Testing all blood and blood products of HIV I and HIV II.
- Heat treatment of factor VIII, IX before giving them to the haemophiliacs.
- Strict sterilization practices in hospital and clinics including aseptic measures.
- Treating STD clients and their partners and educating them.
- Following universal precautions by health care personnel like.
  - a. Wearing impermeable or intact gloves while handling patients during delivery, MR/MTP, vaginal examination or operation.
  - b. Wearing impermeable gowns, shoes, goggles while conducting above procedures.
  - c. Avoiding needle/blade/instrumental injury as far as possible by proper handling and disposal ( the risk of infection is 0.4%).
  - d. Washing the area which comes in contact with blood or other body fluid with soap and water for at least 20 secs.

- e. Avoid exposure of skin cuts or abrasion or any raw area.  
Cover body by proper dressing.

- Antiretroviral agents

1. Azidothymidine
2. Zidovudine
3. Didanosine
4. Zalcitabine
5. Stavudine
6. Nelfinavir

#### **4.12. Self-assessment Questions:**

16. What are the common symptoms in women infected with RTI/STI?
17. What are the important messages to be communicated to the individual for prevention of RTI/STI?
18. What is physiological discharge?



## **UNIT-5**

### ***INFECTION PREVENTION***

#### **LEARNING OBJECTIVES**

At the end of this unit, you should be able to:

- define some of the commonly used terms in Infection Prevention (IP) and explain the importance of IP
- describe the disease transmission cycle of serious diseases such as Hepatitis B and HIV/AIDS.
- discuss the fundamental principles of IP as they apply to RCH services.
- explain the importance of and correctly perform the steps of infection prevention measures and sterilization procedure for final processing of instruments and other items used.
- explain the importance and perform the correct methods of disposal of contaminated wastes.

#### **CONTENTS**

- 5.1. Introduction
- 5.2. Definitions
- 5.3. Disease transmission
- 5.4. Fundamental principles of infection prevention
- 5.5. Universal (Standard) precaution
- 5.6. Hand washing, wearing gloves
- 5.7. Use of antiseptics and disinfectants
- 5.8. Infection prevention measures and their importance

## 5.9. Self-assessment questions

### 5.1. Introduction:

Prevention is better than cure and this is especially true for prevention of infection in health care set-ups. This unit of the module deals with infection prevention while rendering RCH services. The three categories of people who are at risk of infection from service delivery practices are:

- Clients/Patients
- Health Personnel
- Community Members

It is important to prevent transmission of infection at all times, including during the provision of contraceptive services, childbirth, newborn care, post-natal care, immunization, post-abortion care and management of RTIs/STIs.

### 5.2 Definitions:

- **Micro-organisms** are the causative agents of infection. They include bacteria, viruses, fungi and parasites. Bacteria can be further divided into three categories for the purpose of IP.

**Vegetative** (Staphylococcal)

**Mycobacteria** (Tuberculosis)

**Endospores** (Tetanus)

- **Protective barriers** are the barriers between the host and the micro-organisms. Protective barriers may be physical, chemical, or mechanical processes which help to prevent the spread of infectious micro-organisms from clients/patients, health personnel or from health personnel to clients/patients due to lack of IP practices or from the contaminated instruments, equipment or linens etc.

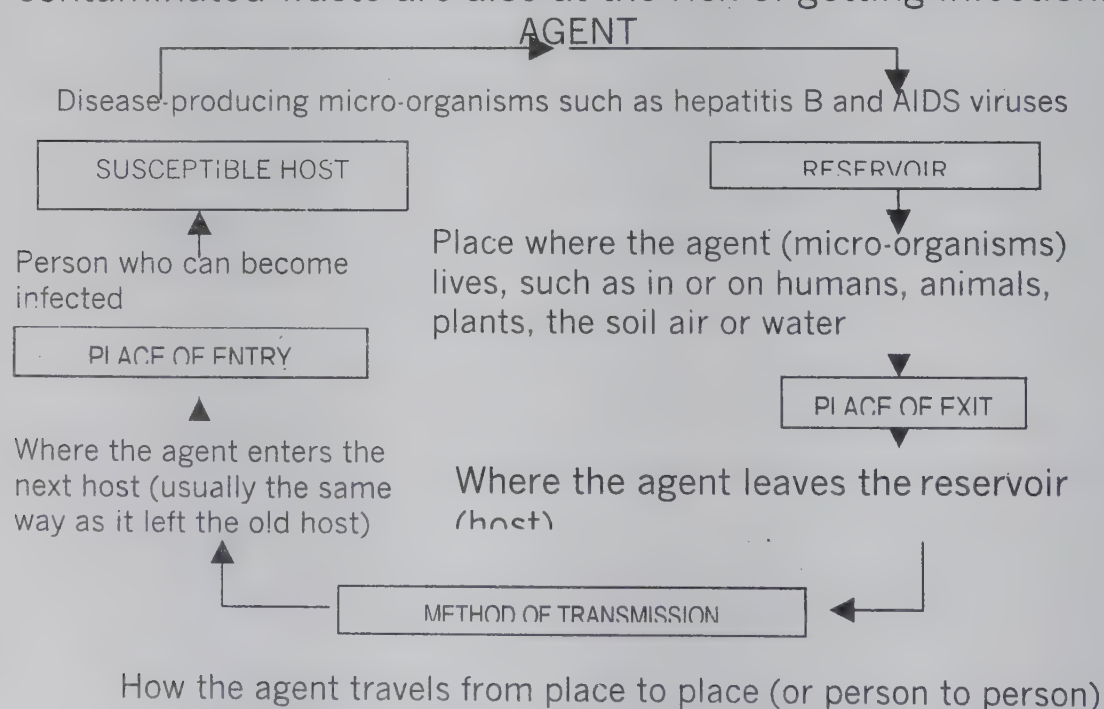
- **Aseptic technique or asepsis** is the combination of efforts made to prevent the entry of micro-organisms into an area of body where they are likely to cause infection. The goal of asepsis is to reduce or eliminate the number of the micro-organisms on both animate (living) surface (skin, tissues) and inanimate objects (surgical instruments) to a safe level.
- **Antisepsis** is the prevention of infection by killing or by inhibiting the growth of micro-organisms on the skin and other body tissues.
- **Decontamination** is the process that makes inanimate objects safer to be handled by staff especially cleaning personnel before cleaning. Such objects include large surfaces e.g. pelvic examination tables, or OT tables and surgical instruments and gloves contaminated with blood or body fluids during or after surgical procedures or examination, or therapeutic procedures.
- **Cleaning** is the process that physically removes all visible blood, body fluids or any other foreign material such as dust or soil from skin or inanimate objects.
- **Disinfecting** is the process that eliminates most but not all disease causing micro-organisms from inanimate objects. High level disinfecting (HLD), through boiling or use of the chemicals, eliminates all micro-organisms except some of the bacterial endospores like tetanus spores.
- **Sterilization** is the process that eliminates all the micro-organisms (bacteria, viruses, fungi and parasites) including bacterial endospores.
- **Reservoir** is a place where the micro-organism agent lives e.g. air, soil-water, animals, plants or on humans.
- **Susceptible host** is person who can become infected.

### 5.3 Disease Transmission Cycle:

Micro-organisms live everywhere in our environment. Individuals normally carry them on their skin, respiratory, intestinal and genital tracts. These micro-organisms are known as normal flora. In addition microorganisms live in animals, soil, air, plants and water. Some organisms are more pathogenic than others, i.e. they are more likely to cause the disease. Given the right circumstances all micro-organisms may cause infection. Bacteria, viruses and other agents survive and spread within the community due to the presence of certain favourable factors or conditions. The cycle of the disease transmission from reservoir to susceptible host is illustrated in Fig. 5 1.

### 5.4. Fundamental Principles of Infection Prevention (IP):

Everyone who works at health care facility is at risk of getting the infection. The doctors, nurses, or health workers who have direct contact with clients/patients and those who wash the instruments and other items, clean up the examination rooms, OT and dispose the contaminated waste are also at the risk of getting infection.



**Fig. 5.1 Disease transmission cycle**



Diseases producing micro-organisms live in reservoir like humans, animals and plants. From there they reach the susceptible individual via skin, orofaecal route blood stream etc. You can break the disease transmission cycle by preventing the spread of infection.

Clients are at risk of infection when appropriate IP measures are not taken by the health personnel e.g. hand is not washed between clients/patients or the procedures, inadequate preparation of the client prior to clinical procedures or use of instruments or equipment which has not been appropriately disinfected.

Health personnel including you and cleaning staffs are at significant risk of infection because they are exposed daily to the potentially infectious blood and other body fluids and potentially contaminated instruments, linens and waste. Therefore appropriate infection prevention procedures can and should be adopted by every staff member of health care facility as they apply to his or her tasks. Mode of transmission is the easiest point to break in the disease transmission cycle. While providing RCH service to client this can be accomplished by:

- Hand washing.
- Aseptic techniques.
- Correct disinfection of the instruments and other items for reuse.
- Correct disposal of medical wastes.

**Make safety a habit, protect the client/patient and yourself**

Remember it is not always possible to know who is infected with HIV or Hepatitis-B which are various conditions and can lead to the death of the individual. Therefore any instrument needle, syringe or linen contaminated with body fluids or blood must be handled as though the client/patient is potentially infected. Therefore appropriate infection prevention measures must be taken to minimize transmission of infection.

**Infection prevention is the responsibility of every staff member working in the health care facility.**

### **5.5 Universal (Standard) Precautions:**

These are set of clinical practice recommendations to help to minimize the risk of exposure to infections to both clients and workers. They help to break the disease transmission cycle at the mode of transmission step. The precautions to be taken by you are:

- Wash your hands.
- Wear gloves in both hands.
- Wear gowns/plastic aprons.
- Properly disinfecting the instruments and client care equipment.
- Maintain environmental cleanliness and adopt appropriate waste disposal practices.
- Handle, transport and process soiled/used linens correctly.
- Prevent injuries with sharp instruments (puncture wounds).

### **5.6. Hand Washing, Wearing Gloves:**

#### **Hand Washing**

Hand washing is the single most important infection prevention procedure. Wash your hands thoroughly with soap and water. Hand washing leads to significant reduction in number of potential infection causing organisms on your hands. It decreases client morbidity (sickness) and mortality (death) due to clinically acquired infections. (Fig. 5.2.).

Appropriate situations for hand washing procedures to be adopted by you are:

- Before examining the client.
- After examining the client.

- Before putting on the gloves for clinical procedures such as pelvic examination and IUD insertion.
- After touching any object that might be potentially infected e.g. contaminated with blood or body fluids or touching mucus membranes.
- After removal of gloves.

Check your hands for any cuts, sores or rashes. Cover any cuts etc. with waterproof adhesive plaster. If doubtful about the presence of cuts etc. rub a little spirit, any burning sensation confirms it. Avoid contact with blood, semen, vaginal fluid or any other body fluids on broken skin with rashes. Always wear gloves whenever you are likely to touch any body fluids.

A brief hand washing with plain or anti-microbial soap for about 10 to 15 seconds followed by rinsing in running stream of water is sufficient for most of the activities. If hand washing is not done properly then you can miss a few areas as shown in Fig. 5.4.

Micro-organisms grow and multiply in moisture and standing water; therefore you must ensure the following things:

- that if bar soap is used, provide small bars and soaps racks, which drain.
- to avoid dipping hands repeatedly into basins containing the standing water with addition of antiseptic agent, such as dettol or savlon, because micro-organisms may survive and multiply in these solutions.
- when running water is not available then use a bucket with a tap which can be turned off to lather hands and turned on again for rinsing or some body must pour water from a container for your hand washing.
- dry your hands with clean towel or air dry. Shared towels can readily be contaminated Fig. 5.3.



- **Wear Gloves**

As a precaution, gloves should be worn in both hands by all health personnel including you prior to contact with blood or any body fluids from any client. A separate pair of gloves should be used for each client to avoid cross-infection. Regarding use of gloves remember the following points:

- Do not use gloves, which are cracked, or have detectable holes or tears.
- Used gloves should be put in 0.5 % solution of chlorine for 10 minutes prior to cleaning with soap and water.
- While cleaning gloves do it inside and out side.
- Rinse in clean water until no soap remains.
- Test gloves for hole by inflating them by hand and holding under water. (Air bubbles will appear if holes are present).
- Gently air-dry the gloves inside out before proceeding with HLD or sterilisation.

## **5.7 Use of Antiseptics and Disinfectants:**

- **Antiseptics: (Savlon, Betadine, Dettol)**

Antiseptic is a chemical agent used on skin and mucous membrane to reduce the number of micro-organisms without causing damage or irritation. Antiseptics are not meant to be used on inanimate objects or surfaces as they usually do not have the same power as disinfectant to kill the micro-organisms on inanimate objects. Items such as pick-up (Cheatles) forceps, scissors, scalpel, blades and suture needles should never be left soaking in an antiseptic solution.

Antiseptics are used for:

- Surgical hand scrub.
- Skin, cervical or vaginal preparation prior to clinical procedure.



Hand washing in high-risk situations such as prior to invasive procedure or contact with a client at high-risk of infection (e.g. Newborns or immuno-suppressed clients).

- **Disinfectants**

High level disinfectants (HLD) will destroy all micro-organisms except some bacterial endospores. Objects that have undergone HLD are safe to touch intact mucus membranes or broken skin. HLD can be achieved by boiling or soaking the instruments in various chemical disinfectants.

Do not use any disinfectant on skin or mucus membranes as they can potentially damage the tissues.

## **Chlorine**

- Chlorine solutions are fast in action.
- Very effective against Hepatitis-B virus and against HIV.
- It is very cheap and readily available.
- 0.5% of chlorine solution is used for 10 minutes decontaminating surfaces and instruments before cleaning. (One table-spoonful 10-15 gms of bleaching powder in one litre of water).
- Is corrosive to metals with prolonged contact (more than 20 minutes).
- Can be irritating to the eyes, skin and to the respiratory tract.
- Should be changed daily, prepared freshly or more frequently, since the potency can be lost rapidly over time or after exposure to sunlight.

## **Boiling**

Boiling water is an effective practical way to provide HLD of gloves and instruments when sterilization cannot be done. Boiling instruments in water for 20 minutes will kill vegetative forms of

bacteria, viruses (HIV/Hepatitis-B), fungi but it will not reliably kill all endospores and thus will not achieve sterilization.

### **Boiling Tips:**

- Start timing when water begins to boil.
- Always boil for 20 minutes in a vessel with a lid.
- Items must be completely immersed in water during boiling.
- Do not add anything to the vessel after boiling begins.
- Air-dry before use or storage.

**Advantages:** Boiling is an excellent, inexpensive procedure. It is easily controlled and requires no dilutions. The heat source; pan and water are commonly available.

**Disadvantages:** Boiling must be correctly performed to ensure effectiveness (i.e. timing started only after water has reached boiling point and no items are added after timing has started). Objects cannot be packed tightly during boiling to ensure proper disinfecting.

The antiseptic or disinfectants become contaminated when:

1. for dilution, the water used is contaminated.
2. the containers are contaminated.
3. when contaminated instrument or other items come in contact with the solution or the area where solution is prepared, is not clean.

Prevent contamination of the solutions by pouring it into small clean reusable container during service delivery. Always pour solution out of the container without touching rim or solution itself with your hand or cotton gauze as these can contaminate the entire bottle of solution.

### **5.8. Infection Prevention Measures:**

- Wash hands thoroughly with soap and water.

- Wear gloves when performing a procedure in the clinic, when handling soiled instruments, gloves, or other items or when disposing off contaminated waste.
- Wear utility gloves while washing the instruments and other items. (Utility gloves are thick rubber gloves).
- Clean the client's skin properly before giving an injection. Separate syringe and needle should be used for each client.
- The reusable items must be decontaminated after use on each client. The decontamination is to be done by soaking in 0.5 % chlorine solution. After decontamination, clean well with detergent/soap and water using brush to remove any dirt or organic matter, etc. Sterilization should be done after cleaning.
- Sterilized objects should not be touched with bare hands.
- Do vaginal examination only when needed. Clean the cervix with antiseptic solution before insertion of IUD.
- Observing the principle of five cleans viz:
  1. Clean hands
  2. Clean surface
  3. Clean blade
  4. Clean cordtie
  5. Clean cord stump
- Do not use surgical spirit or alcohol for wiping spills etc. on surfaces as it evaporates too fast to kill HIV.
- Break ampoule with opener or file to avoid injury to your hands.
- Never leave the needle inserted in the rubber stopper of the vial (as this will provide direct route for entry of bacteria into the vial).
- Never pipette blood or any other body fluids by mouth.
- Do not touch your eyes or nose or other exposed skin or mucus membranes while working.
- Always carry needles or sharps in a kidney tray before and after use. (Dispose these carefully by putting them in

separate labelled puncture proof container immediately after use).

- Put any waste that has been soiled by body fluids into a separate labelled and covered container.
- Always use prelabelled screw cap container for collection of samples. Wipe the external surface of the container with 0.5% chlorine solution.
- Incinerate (burn) the contaminated waste daily or bury in a pit containing bleaching powder.
- Wash hands, gloves thoroughly after disposing the wastes.
- The woman must use clean cloth or vaginal pads after delivery.
- If the practice is to bury the placenta spread bleaching powder in the pit for burial and then on the placenta. Other blood soaked items being discarded should be covered with bleaching powder.



Fig. 5.2 Steps of Effective handwashing



Step 1: Wash palms and fingers



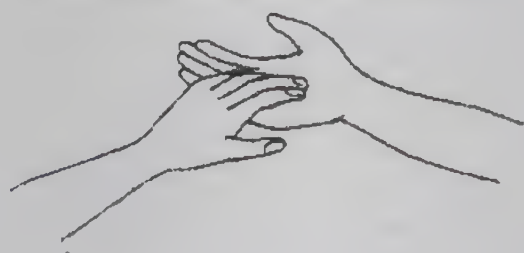
Step 2: Wash back of hands



Step 3: Wash fingers and knuckles



Step 4: Wash thumbs



Step 5: Wash finger tips

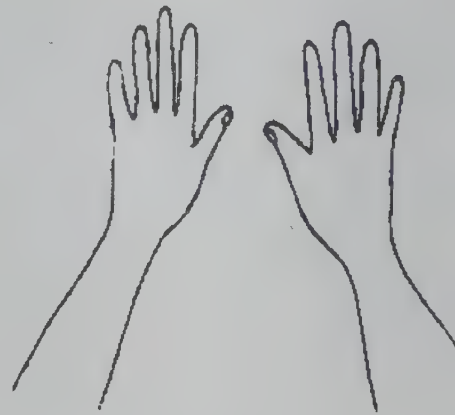


Step 6: Wash wrists

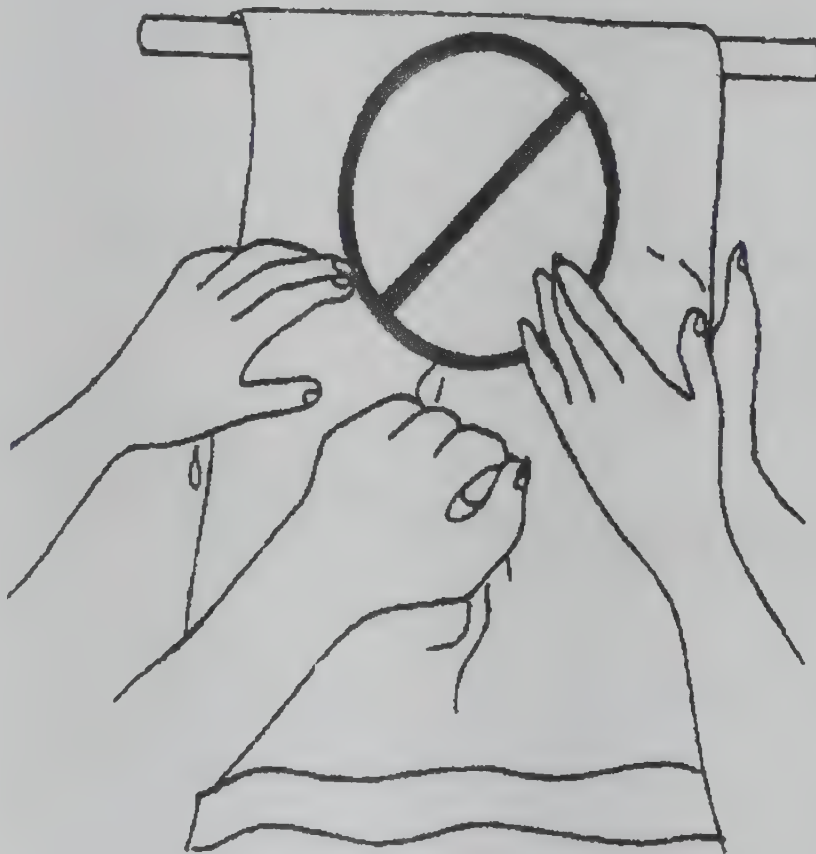
**Fig. 5-3 Hand Drying**



**Personal Towel**



**Air Dry**



**Don't use a communal towel  
to Dry hands**

**Fig. 5.4 Areas commonly missed during handwashing**



**Key points: (Infection Prevention)**

- Prevention is better than cure.
- Infection can be transmitted from client to client or client to health worker or vice-versa and from health care facility to community.
- Mode of transmission is the easiest point to break in the disease transmission cycle.
- Every person working in the health care facility has the responsibility to observe I.P. measures.
- Standard precautions must be observed with every client as it is not possible to know whether the client is infected with HIV or Hepatitis-B infection.
- Antiseptics to be used only for living tissues (skin, mucus membranes). Disinfectants should not be used on skin or mucus membranes.
- Always decontaminate before cleaning, sterilization.
- Thorough hand washing with soap and clean running water is the most important step in I.P.
- Use of principle of 5 cleans is crucial for I.P. during or after delivery.
- Appropriate disposal of contaminated waste is important to prevent spread of infection in the community.

**5.9. Self-assessment Questions:**

19. Do you make chlorine solution
20. Enumerate some of the methods of infection control for prevention of infection amongst health personnel?
21. What is the appropriate time for hand washing?



## Answers to Self-assessment Questions on Antenatal Care

1. The leading causes of maternal mortality in India are:

- Anaemia and Haemorrhage
- Infections
- Toxemia
- Obstructed labour
- Induced abortions

2. The presence of following symptoms and signs indicate threatening (imminent) eclampsia.

- Severe headache and dizziness.
- Generalized edema of hands and or face.
- Blurring of vision or double vision.
- Nausea, vomiting and/or epigastric pain.
- Proteinuria.
- Decreased urine output (Oliguria).

3. Refer to FRU in the following situations:

- Bad obstetric history
- Bleeding during pregnancy (more than 12 weeks)
- P.I.H./Eclampsia
- Abnormal presentation
- Multiple pregnancy/over distended uterus
- Grande Multipara
- Previous H/O operative delivery e.g. Caesarean Section  
Difficult forceps
- Age more than 35 years
- Floating head in a primigravida at 38 weeks or later
- Pre-term labour
- Premature rupture of membranes (if labour pain does not start within 6-8 hours)
- Very big/very small baby

4. The danger signs during pregnancy are:
- Bleeding
  - Breathlessness (severe anaemia)
  - Convulsions, severe headache
  - Swelling of face and hands
  - High grade fever
  - Labour pain for more than 12 hours
5. Signs of onset of labour are:
- Painful uterine contraction
  - Presence of show
  - Cervical effacement and dilatation
  - Formation of "bag of fore waters"
6. All women should have institutional delivery or delivery conducted by trained personnel. However if the woman insists then only the following may be allowed to deliver at home.
- Woman para 1 or 2 who have had previous normal deliveries of average size baby (ies) who is/are alive and well.
  - During this pregnancy they have had no complication/risk factors.
  - They have had regular ante-natal care and received all necessary interventions (TT, IFA etc).
7. The following are signs of separation of placenta:
- the uterus is hard and globular.
  - there is a sudden gush of blood when the placenta separates.
  - the length of the portion of the cord outside the vulva increases.
  - if the fundus of the uterus is gently pushed up towards the umbilicus, the cord will not recede into the vagina.

8. Post-natal care is needed for:
- Health check-up
  - Risk detection
  - Management of normal puerperium
  - Treatment of minor ailments
  - Treatment of anaemia
  - Health and nutrition education
  - Referral of cases at risk in puerperium
9. Two main objectives of second health check-up of post-natal woman are:
- To check for completeness of involution.
  - To screen woman for fitness for contraceptive method of her choice.
10. Three important health and nutrition educational messages for post-natal woman are:
- Family planning saves life.
  - Breast-feeding is best, continue it for longer period.
  - Get your child completely immunised before the age of 1 year.
11. The dangers of unsafe abortion are:
- Infections (sepsis) resulting in various life-threatening situations like peritonitis, septicemia, renal failure and death.
  - Excessive vaginal bleeding resulting in shock, and death.
  - May result in vesico-vaginal or recto-vaginal fistulae.
12. Best period for safe abortion is between 6-10 weeks of gestation.

13. The advantages of condoms are:

- Easily available.
- Easy to carry.
- Cheap.
- Protects against STDs and AIDS.
- Ensures male participation.
- No prescription is needed.
- No systemic side-effects.
- Help men with premature ejaculation.
- Effective when used with a spermicide.
- Help in prevention of cancer cervix in female partner.

14. The advantages of oral pills are:

- Safe.
- Reversible.
- Decision with woman herself.
- Non-invasive.
- Privacy not required.
- Reduces menstrual blood loss, thus reduces chances of anaemia.
- Relief from pain during menstruation.
- Relief from pre-menstrual symptoms.
- Regulates menstrual cycles if they are irregular.
- Reduces chances of ectopic pregnancy.
- Provides some protection against pelvic infection.
- Protects against benign tumours of breast and ovarian cysts.
- Reduces chances of developing cancer of uterus and ovary.

15. The contra-indications of IUCD are absolute and relative

**Absolute are:**

- Pregnancy.
- Anaemia with haemoglobin less than 8 gms %.



- Excessive or irregular menstrual bleeding.
- Active genital tract infection e.g. vaginitis, cervicitis, pelvic inflammatory disease, septic abortion, cervical erosion.
- Enlarged uterus and.
- Previous history of ectopic pregnancy.

**Relative are:**

- Previous history of caesarean section;
- Medical disorders like heart disease, diabetes, etc.

16. The common symptoms in women infected with RTI/STI are:

- Vaginal discharge with or without itching.
- Genital ulcers.
- Lower abdominal pain.
- Backache.
- Woman whose husband/sexual partner has problem of urethral discharge with burning during urination or ulcers of genitals, scrotal swelling or inguinal buboes.

17. The following messages to be given:

- single mutually faithful sexual partnership.
- avoiding sexual contact if any of the sexual partners is having RTI/STI.
- correct condom usage.
- ensuring complete treatment of self and sexual partners.
- maintaining proper menstrual hygiene by use of clean pads/cloth, frequent change of the cloth.
- observing aseptic precautions during delivery/abortions and utilizing the available ante-natal and intra-natal and M.T.P. services.
- protecting your baby against the effect of RTI/STI by attending ante-natal clinic regularly.
- All cases of RTI/STI to be referred promptly to medical officer for diagnosis and treatment.

18. Physiological discharge occurs during ovulation, just before menstruation or during pregnancy. At these times the discharge is mucoid, not blood stained, or foul smelling and not associated with itching of the vulva. It requires no treatment.
19. Chlorine solution is made by adding one table spoonful 10-15 gms of bleaching powder in one litre of water.
20. Methods for preventing infection amongst health personnel are:
  - Proper decontamination and disinfecting of the instruments, gloves and linen. All the things can be decontaminated by dipping in bleaching power solution (1 Table spoonful - 15 gms in 1 litre of water ) for 10 minutes.
  - Sterilization of the instruments by autoclaving or boiling for 20 minutes.
  - Wipe all the contaminated surfaces with 1.5 % bleaching solution.
  - Disposal of waste material: Waste should be buried or burnt. It should never be left outside or left open in pits.
21. Appropriate time for hand washing is:
  - Before examining the client.
  - After examining the client.
  - Before putting on the gloves for clinical procedures such as pelvic examination and IUD insertion.
  - After touching any object that might be potentially infected e.g. contaminated with blood or body fluids or touching mucus membranes.
  - After removal of gloves.
  - Wear gloves in both hands, wash hands after removing gloves.

# Child Health

for

## M.O.(P.H.C.)







## UNIT – 1

### ***NEWBORN CARE***

#### **STRUCTURE**

- 1.1 Introduction
- 1.2 Care at birth
- 1.3 Examination of newborn at birth
- 1.4 Prevention of hypothermia
- 1.5 Prevention of infection
- 1.6 Normal phenomena after birth
- 1.7 Resuscitation of newborn who does not breathe after birth in the delivery room
- 1.8 Care of LBW babies
- 1.9 Care of sick newborn babies

#### **LEARNING OBJECTIVES**

*At the end of this unit, you should be able to:*

- Outline the steps in the immediate care at birth.
- Explain the steps in the resuscitation of an asphyxiated newborn.
- Examine a newborn baby.
- Identify babies in need of referral.
- Provide care for LBW babies.
- Treat sick babies.

## 1.1 INTRODUCTION

More than half the infant deaths occur in the first 28 days of life (also called the newborn period). Most of these deaths take place in the first week of life. The major causes of these deaths are due to birth asphyxia, hypothermia and infections. Babies born with a low birth weight (less than 2500 gms) (LBW) are at higher risk of dying due to these causes. You as the Medical Officer have an important role in providing “Essential Newborn Care” to all the newborns so that it can help reducing both neonatal and infant mortality. In this unit you shall appraise yourself of **Essential Newborn Care** which consists of care of the newborn at birth, provision of warmth, prevention of infection, care of LBW and sick newborns, and early identification of newborns needing referral.

## 1.2 CARE AT BIRTH

The room where the delivery takes place should be clean, well ventilated and adequately lighted. Ensure the “Five” cleans during delivery:

- **Clean hands**
- **Clean surface**
- **Clean scissors/blade**
- **Clean cord tie**
- **Clean cord stump (no application on cord)**

### *1.2.1. Provision of Warmth*

Receive the newborn at birth in a dry, prewarmed, and clean cloth. Place the baby preferably under a source of warmth – 200 watt bulb. Dry the newborn immediately after birth, but do not remove the vernix (it protects the baby from hypothermia and infection). After drying, the wet cloth should be discarded (to prevent the baby becoming cold or hypothermic) and the baby wrapped in another clean dry cloth.

In a normal baby, who is crying well after birth, the baby must be placed in close contact with the mother. The maternal body heat will provide the extra warmth required to keep the baby warm. It also has the added advantage of reassuring the mother of her baby's well being.

Loss of body heat or hypothermia (body temperature < 36°C) can be further prevented if you ensure that the delivery room is warm, there are no fans running in the delivery room or open windows through which air current blow into the room when the baby is being delivered.

### ***1.2.2. Cord Care***

The umbilical cord must be cut with a sterile scissors/blade, about 2.5 cms from the abdominal skin surface. The cord should be tied with a sterile cord tie. Inspect the stump for bleeding. If bleeding is detected, apply another cord tie. There is no evidence that use of any local antiseptics prevents umbilical infection. The umbilical cord should be left dry without antiseptics or dressing.

### ***1.2.3. Eye Care***

The eye should be cleaned with clean cotton swabs, using one for each eye. The eyes should be cleaned from medial to the lateral side. There is no role of prophylactic eye applications.

### ***1.2.4. Recording birth weight***

The weight of all babies must be recorded at birth on an infant weighing scale. Low birth weight babies (those less than 2500 gm) need special care (Refer section 1.8).

### ***1.2.5. Initiating breast-feeding***

It is very important both for the mother and her infant that breast-feeding should be initiated within ½ hour of birth. The delivery room staff must ensure that the mother puts the baby to

breast as soon after delivery as possible. The advantages for the mother are that it aids uterine involution and decreases the risk of post-partum haemorrhage. The baby is benefited by the provision of nutrition and immunity from breast milk and increased maternal-infant bonding. No prelacteal feeds such as water, glucose, honey, ghutti, 'gur', etc. should be given to the baby.

### **1.3. EXAMINING THE NEWBORN AT BIRTH**

Every newborn must be carefully examined for malformations. You must also evaluate their respiration, heart rate and circulatory status.

#### ***1.3.1. Identification of malformations***

Examine all babies for major malformations such as hydrocephalous, meningomyelocele, large omphalocele, absent anal opening, etc. All these major malformations need immediate referral to a health facility that has surgical facilities for children.

#### ***1.3.2. Breathing pattern***

The normal respiratory rate in the newborn is between 30-40 per minute and rarely may go upto 60 breaths per minute. However, if you observe the newborn baby's breathing pattern over 1-2 minutes, you would observe that the pattern of breathing is irregular. There are periods of fast breathing interspersed with periods of slower breathing. This pattern is known as 'periodic breathing'. Therefore it is necessary that while counting the respiratory rate of a newborn, it should be carried out for at least 1 minute. Also note that the baby's respiratory rate may increase soon after or during breast-feeding. Therefore another important condition while counting the newborn's respiratory rate is that the baby must be quiet and not feeding.

**Respiration would be considered abnormal in a newborn if:-**

- a. Respiratory rate > 60 per minute.



- b. There are intercostal/subcostal retractions.
- c. Associated with apnea (cessation of breathing) which is accompanied by cyanosis or heart rate <100 bpm.

### ***1.3.3. Heart rate***

In the newborn, the heart rate is counted in preference to the pulse rate. This is because the peripheral pulses are not always readily palpable as in the adult, except over the femoral arteries. The normal heart rate of a newborn is between 100-160 bpm. Values below 100 bpm or greater than 180 bpm are considered abnormal and etiology for the same must be looked for. If the heart rhythm is regular, the heart rate may be counted for 6 seconds and multiplied by 10 to get the heart rate per minute.

### ***1.3.4. Assessing perfusion***

In the adult, one of the best ways of assessing perfusion is the blood pressure measurement. But in the newborn, blood pressure recording is not easy. Therefore, we have a simpler, but equally efficient clinical sign that provides information on the peripheral perfusion status. Gently apply pressure over the neonate's sole or the sternum with your thumb for 15 seconds and release to observe the time for the capillaries to refill to eliminate the blanching caused by the pressure. The normal capillary refill time is less than 3 seconds. It is prolonged not only in shock/hypotension, but also when the infant is hypothermic. Thus, this sign is not only a good measure of perfusion pressure but also of the infant's temperature.

### ***1.3.5. Colour***

The colour of the baby provides us with useful information on its well being. The normal newborn is pink. However, if the baby is pale (as in anaemia), yellow (as in jaundice) or blue (as in cyanosis), they are all cause for concern and would need immediate investigation for the cause of this abnormal colour.

## 1.4. PREVENTION OF HYPOTHERMIA

The newborn has limitations in body temperature regulation compared to the adult. This is because of factors that increase body heat loss and its inability to generate sufficient heat to match the heat loss. These handicaps predispose the infant to hypothermia (Body temperature < 36°C) with its attendant serious sequelae. Hypothermia can be prevented by:

- Keeping baby in close body contact with the mother.
- Clothing the baby adequately especially in cold weather when the baby must be clothed in adequate woollens.
- Room where baby is placed should be kept warm.
- The room should be free of draughts.

### *1.4.1. Temperature recording*

The simplest way to measure temperature is using a thermometer either in the axilla or per rectally. In the case of rectal temperature record, the thermometer should not be inserted for more than 2 cms. At both sites the thermometer should be kept for at least 3 minutes before recording the temperature. The normal temperature of a baby is between 36.5 and 37.5°C. Axillary temperature is comparable to rectal temperature and is also probably safer (less risk of injury or infection).

### *1.4.2. Managing hypothermia*

**Hypothermia is temperature less than 36°C.** If the baby's feet or trunk feel cold, the temperature must be recorded to confirm that the temperature is less than 36°C. **Hypothermia must be immediately treated.** Rewarm the baby by placing under a heat source such as 200 W bulb placed 45 cms above the baby, or radiant warmer. If either of these are not available then place baby and mother in skin to skin contact and wrap them together to rewarm the baby. If after 1 hour the temperature does not begin to normalize, immediately refer the baby to a facility with better warming facilities. During transport make sure that the baby is kept

in close contact with attendant so that further hypothermia during transport is prevented.

### 1.5. PREVENTION OF INFECTION

Prevention of infection is very important as newborn infants are susceptible to infection and succumb to it quickly. The strategies to prevent neonatal infections are outlined below:

- Administering TT immunization to mother and clean delivery practices minimize neonatal tetanus infection. The attendant delivering the baby must wash their hands with soap and water prior to conducting delivery. Every attendant at birth must try and use pre-sterilized gloves during the delivery process.
- Cut the cord using sterilized scissors. Keep the cord dry and do not apply anything on it.
- An important source of infection is pre-lacteal feeds and water. A non-breast fed baby is at several times higher risk of diarrhoe. So exclusive breast-feeding should be promoted.
- Persons with skin infections, respiratory infections or diarrhoe must not handle the baby till their infection is under control.
- In case of institutional deliveries, the zero dose of OPV and BCG vaccine should be administered before they are discharged.

### 1.6. NORMAL PHENOMENA AFTER BIRTH

There are some important adaptive changes after birth that take place in the newborn especially during the first week of life. It is important to appreciate that these phenomena because compared to the adult or older child, these are not pathologic conditions and only need reassurance.

- **Meconium passage.** The first stool that the newborn passes is a dark, greenish black, sticky substance called meconium. It is made up of intrauterine swallowed amniotic fluid, intestinal secretions and shed epithelial cells. The meconium is first passed within 24 hours of birth (except when it has been passed in-utero as in some fetuses). Non-passage of meconium within the first 24



hours is cause for concern and it may indicate intestinal obstruction, especially when associated with abdominal distention. Such children should be immediately referred for investigation and appropriate treatment.

- **Urine passage.** Most newborns would pass urine in the delivery room soon after birth or by the next 24-48 hours. Non-passage of urine by 48 hours is always abnormal and indicates need for referral. It could be a result of renal or genitourinary tract malformation.

A normal newborn after 2nd day of life would pass urine 6-7 times each day. Some newborns may cry just before passage of urine and become quiet after they have passed the urine. It is a normal phenomenon seen in both boys and girls and is no cause for alarm.

- **Transitional stools.** After the passage of the first meconium, the newborn continues to pass dark greenish, sticky stools 3-4 times a day for the next 2-3 days. This is followed by a phase where the stool changes in character and this is the transitional stage or transitional stools. The features of transitional stools are:
  - Greenish yellow colour of stool.
  - Increased frequency of stools which may be as high as 15 times per day.
  - Loose (and sometimes watery) consistency.
  - This stage may last from 6-20 days.

No treatment is needed except reassurance to the mother and the family.

Normal stooling pattern in a breast-fed baby is highly variable. After the first two weeks of life the neonate may pass upto 15-20 stools each day (especially after each feeding session) or once in 5-6 days. Frequent passage of stools can be distinguished from diarrhoea by the following features:

- Diarrhoea may have associated blood/mucous in the stools.



- Diarrhoe is associated with clinical dehydration.
- The newborn may appear sick with diarrhoe.

Equally important to remember is that when a newborn passes stools once in 5-6 days, it may be normal provided (i) the stool is soft and yellow, (ii) there is no abdominal distention or yellow coloured vomitus. The presence of these features may indicate intestinal obstruction.

- **Vomiting.** Some newborns frequently bring out mucoid secretions during the first day of life. This is due to swallowing of amniotic fluid, which can sometimes be irritating to the stomach resulting in a condition called mucous gastritis. Stomach wash with normal saline will take care of the problem.

Newborns also swallow a lot of air during feeding and if not properly burped after a feed, the baby may regurgitate/vomit the feed. All babies should be burped to expel the swallowed air soon after feeding.

Vomiting is pathological and may indicate an intestinal obstruction if it is:

- Persistent,
- bile or blood stained, and
- projectile in nature.

- **Mongolian spot.** Mongolian spots are bluish-black patches of pigmentation especially over the sacral and buttock areas. They may also be seen in the trunk and extremities. The pigmentation is a normal variant and would disappear by 6 months of age.
- **Erythema Toxicum.** An erythematous rash may appear on the second or third day. It usually begins from the face and spreads to the trunk and extremities over the next 24 hours. It disappears spontaneously in 2-3 days without any specific treatment. It causes no discomfort to the baby. The exact mechanism is not known. This condition needs no treatment.

- ❑ **Vaginal discharge/bleeding.** Most female babies have thin white mucoid secretions from the vagina. This should not be mistaken for pus. The treatment needed is to clean it with clean water and keep the place dry.

Menstruation like withdrawal bleeding can occur in upto 25% of female babies after 3-5 days of life and last for 2-4 days. The genitalia should be kept clean and dry. There is no need for additional vitamin K in these babies.

- ❑ **Mastitis.** Breast engorgement may occur in newborns of either sex on the third or fourth day of life and may last for a few days. This is due to the transplacental transfer of maternal hormones. Local massage, fomentation or manual expression of discharging milk must be avoided. The mother only needs to be reassured.
- ❑ **Physiological jaundice.** Jaundice may occur in the newborn as a physiological phenomenon.

Features of Physiological jaundice include :

- clinical jaundice appearing after 24 hours of birth.
- peak level of bilirubin never exceeding 15 mg/dl (This clinically corresponds to staining of skin yellow till the wrists and ankles but sparing the palms and soles).
- jaundice decreasing by 7-10 days of life.

However, when the jaundice does not fulfil the above conditions it is pathological. It indicates a need for immediate referral and treatment. High levels of bilirubin, especially > 20 mg/dl, are associated with the risk of brain damage.

- ❑ **Caput/cephalhematoma.** Soon after birth most babies have a boggy swelling over the scalp, which is the caput succedaneum. This is because of pressure over the presenting part. This has to be sometimes differentiated from cephalhematoma, which is a subperiosteal haemorrhage. The cephalhematoma usually appears after 2-3 days when the caput is disappearing, it does not cross the sutural lines unlike a caput.

While the caput is benign, a cephalhematoma can be associated with anaemia (due to loss of blood into the subperiosteal space) or jaundice (due to hemolysis of blood collected in the subperiosteal space).

### **1.7. RESUSCITATION OF NEWBORN NOT BREATHING SOON AFTER BIRTH**

Babies who do not breathe immediately after birth need help to establish breathing. The steps involved in assisting the baby to start spontaneous breathing are known as resuscitation. The table provides a list of equipment you would need for newborn resuscitation.

#### **Equipment Needed For Neonatal Resuscitation**

- Self-Inflating Bag and Mask
- Oxygen
- Mucus sucker
- Syringe/needle (no. 24)
- Adrenaline (1:1000 solution)

#### **1.7.1 Suction**

Most newborns cry soon after birth and do not need any help. But if the baby has not started to breathe by the time it is dried, resuscitation should be immediately started.

- Place the baby under a 200 Watt lamp or radiant warmer.
- Extend the neck of the baby by placing a small folded towel under its shoulders.
- Clear the mouth and then the nose with a mucus sucker. Most newborns begin to breathe after this procedure. Do not use gauze or cloth to clear the oral secretions, as it is not only ineffective, but may also cause injury and infection.

If the baby does not cry or start breathing after oral suction has been done, carry out the following steps:

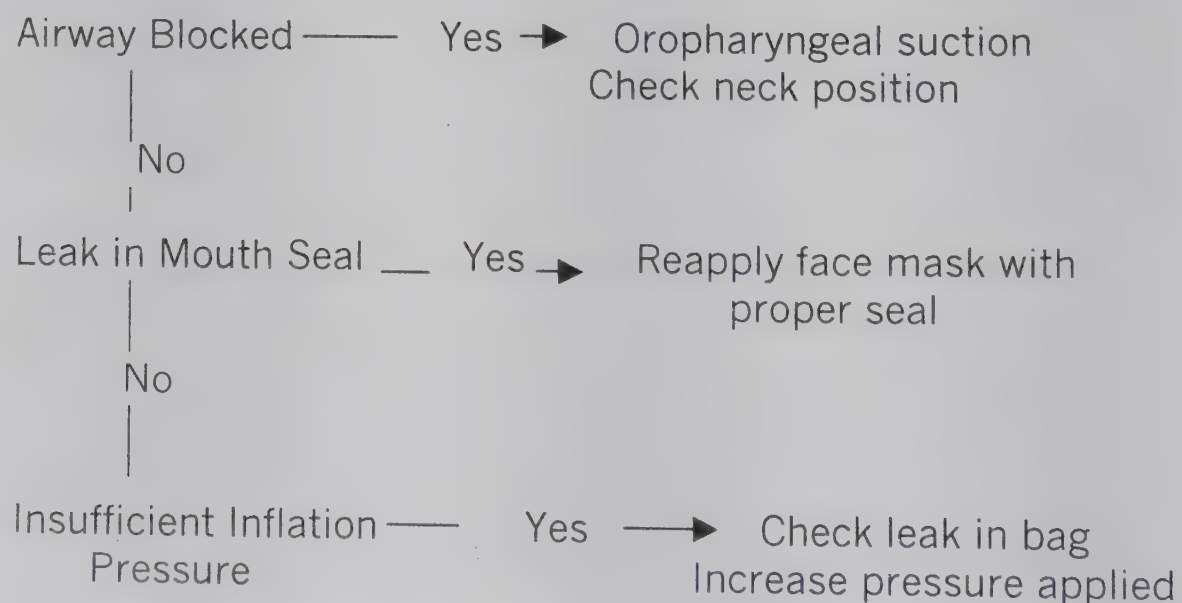
- Stimulate the baby by flicking the soles with fingers two or three times. Do not slap the baby or hang it upside down.
- If the baby does not start breathing or is gasping, start assisted ventilation with a bag and mask.

### **1.7.2. Assisted ventilation**

It is indicated in any apneic baby not responding to tactile stimulus, or any baby who is breathing and has a heart rate <100/min.

#### **Technique of assisted ventilation**

1. Place a small towel under the neonate's shoulder to extend the neck slightly.
2. Select an appropriate size mask, connect it to the bag and place over baby's face to include the chin, mouth and nose.
3. Ensure a good seal, and compress the bag enough to cause a visible chest expansion at the rate of about 40 breaths/minute.
4. **CHECK LIST** in case of non-expansion of chest:





Response to assisted ventilation is assessed 30 seconds after initiating ventilation. Good response to assisted Ventilation (It is also an indication to discontinue assisted ventilation) is indicated by:

- **Appearance of spontaneous respiratory effort**
- **Heart rate > 100 beats/min**
- **Pink colour**

Most babies will respond to assisted ventilation with a bag and mask. Very rarely, the heart rate may not rise above 80/min. In that case it may be necessary to provide cardiac massage.

### ***1.7.3. Cardiac massage***

Cardiac massage needs at least two trained personnel - one for assisted ventilation and the other for cardiac compressions.

**Technique of chest compression is given below:**

1. Place the baby on a firm surface.
2. Identify the lower one-third of the sternum (area between the inter-nipple line and the xiphisternum).
3. Use index and middle finger for compression. Compress 3/4th of an inch at the rate 80-100 times/minute.
4. Ensure coordination between ventilation and cardiac massage – for every two chest compressions offer one assisted breath. This would provide about 80-100 beats/min.
5. Assess response to cardiac massage and ventilation as per flow-chart given in section 1.7.2.
6. Chest compression can be discontinued when the heart rate rises to above 80/min.

### ***1.7.4. Use of drugs***

1. **Adrenaline.** Adrenaline is indicated whenever the heart rate remains < 80/min in spite of chest compression and assisted ventilation. Dose is 0.1ml/kg of 1:10,000 solution. Route of administration can be intracardiac or intravenously.

**How long should resuscitative efforts be continued in a patient who has not established spontaneous respiratory effort?**

If a baby does not establish spontaneous breathing efforts after 30 minutes after birth then discontinue resuscitative effort.

### **1.8. CARE OF LOW BIRTH WEIGHT BABIES**

There is a high prevalence of LBW babies in India (almost 30-35% of all births). They are associated with a high risk of mortality and morbidity.

**Definition:** Any baby who has a birth weight < 2500gms (or 2.5 kgs) is defined as a LBW infant. LBW babies are all not similar. Some of them are premature (born before 37 weeks of gestation) and the rest are term but growth retarded (also known as IUGR= intrauterine growth retarded or SFD= small for dates infants).

**Identification of preterm babies:** The most reliable method of assessing the newborn's gestational age is calculating it from the last menstrual period(LMP) of the mother. However, sometimes this information is not available or is not reliable. In such circumstances the newborn's gestational age has to be assessed by examination of the infant.

The physical examination findings in a preterm baby are: (a) sole creases are absent or present only in the anterior one-third of the sole, (b) the breast nodule is less than < 5mm in diameter, (c) the ear does not recoil immediately on folding, (d) the hair are fine and wooly, and (e) in male infants the testis is not fully descended into the scrotum and in the female babies the vaginal opening is exposed and clitoris is prominent.

**Principles of management of LBW babies.** These include

- Prevention of hypothermia,
- Provision of exclusive breast-feeding, and
- Prevention of infection.

### **1.8.1. Prevention of hypothermia**

Hypothermia is one of the most major complications amongst LBW babies. The strategies for preventing heat loss in a LBW baby are:

- Room-in the baby with mother and keep them in skin to skin contact.
- Adequately clothe the baby and keep baby dry.
- Keep the room where the baby is kept free from cold draughts and in winters keep the rooms warm.
- In addition to the above strategies, additional heat can be provided to the baby by a lamp with a 100-200 W bulb placed about 18" from the baby.
- Record the temperature of the LBW baby atleast 3-4 hourly to ensure that the baby's temperature is kept between 36.5°C and 37.5°C.

### **1.8.2 Feeding**

- All babies including LBW babies must be fed only breast milk. No pre-lacteal feeds should be given as it increases the risk of infection. Early breast-feeding must be initiated, preferably within half to one hour after birth. LBW babies must be fed frequently (preferably 2 hourly or more frequently) because initially most of them suck briefly and also consume small quantities of milk with each feed.
- Some LBW babies suck poorly at the breast during the first few days, even though they are active. In such instances, the breast milk should be expressed into a clean vessel/cup and fed to the baby with a spoon or a traditional spoon like device. The same can be used since they are culturally acceptable to mothers and their families. It is important that these babies are not bottle fed because it increases the risk of infection, especially diarrhoea.
- **Adequacy of feeding** can be assessed by the baby's weight gain. After 7 days of life the baby is expected to gain about 15-20 gms/day or 100-140 gms/week.



### **1.8.3 Prevention of infection**

LBW babies are all predisposed to increased risk of infection. Utmost care must be taken to prevent infection in all these babies.

- People with diarrhoea, skin infections and respiratory infections are all at risk of transmitting the infection to the baby and therefore must stay away from the baby. If the mother has diarrhoea, she must wash her hands thoroughly with soap and water before each feeding session and refrain from putting her hand into the baby's mouth to avoid contamination. If the mother has a respiratory infection, she may mask her face with a clean cloth during feeding to prevent droplet transmission to the baby.
- Avoid pre-lacteal feeds and water, or any other substance except for breast milk.
- The baby must be wrapped in clean, dry linen and clothing and not placed on dusty or dirty surfaces.
- LBW babies must be immunized using the same schedule as for other normal birth weight babies. They should receive BCG within the first 4 weeks of birth and the first dose of DPT/OPV must be given at 6 weeks of life and the next two doses at 4-6 weeks intervals. The dose of the vaccine is also the same as for normal weight babies.

### **1.8.4 Discharging a LBW baby.**

A LBW baby can be discharged when it is

- Feeding well
- Gaining weight
- There is no sickness

### **1.8.5 Referring a LBW baby**

- LBW babies who are more than 1800 gms can be managed at home.
- LBW babies who are between 1500 and 1800 gms can be managed at the primary health facility.



- *LBW babies < 1500 gms should be referred to a health facility where specialist care is available.*
- *LBW babies who are very sick should be referred to a health facility where specialist care is available. Danger signs for referral are given in the next section 1.9.*

## 1.9 CARE OF SICK NEWBORN

Sick newborns need special care and need to be hospitalized. Based on the seriousness of their illness the newborns can be classified into three categories which is provided in the table below:

### Classification of A Sick Newborn

**Table – 1**

Severity	Symptoms	Place of Management
<b>Mild Illness</b>	<ul style="list-style-type: none"> <li>• Umbilical discharge</li> <li>• Conjunctivitis</li> <li>• Pyoderma</li> </ul>	Home
<b>Severe Illness</b>	<ul style="list-style-type: none"> <li>• Diarrhoe</li> <li>• Fast breathing/Chest indrawing</li> <li>• Feeding poorly</li> <li>• Decreased activity</li> <li>• Fever</li> </ul>	Inpatient care at primary health care facility
<b>Very severe Illness</b>	<ul style="list-style-type: none"> <li>• Inability to feed</li> <li>• Persistent hypothermia</li> <li>• Abdominal distention</li> <li>• Cyanosis</li> <li>• Apnea</li> <li>• Convulsions</li> <li>• Bleeding</li> <li>• Severe jaundice</li> <li>• Grunting/stridor</li> </ul>	Refer to health facility which has specialist care available

### 1.9.1. Mild illness

- **Umbilical discharge and pyoderma:** Umbilical discharge and pyoderma can be treated by application of gentian violet.
- **Conjunctivitis** in the newborn can be treated with saline irrigation of the eyes and instillation of chloramphenicol eye drops.

### 1.9.2. Severe illness

*All these newborns can be managed at your health facility.*

- **Provide warmth** and prevent hypothermia by placing baby under a heat source like 200 watt bulb or radiant warmer.
- **Oxygen.** The indications for oxygen therapy in the newborn are:
  - central cyanosis,
  - respiratory rate > 60/min, and
  - severe chest indrawing.

Oxygen can be given with a nasal cannula (No. 8 FG) inserted 2 cms into the nostril. The oxygen must be humidified and the water through which it flows should be warm. In the absence of oxygen monitors, the oxygen concentration that needs to be delivered to the patient can be determined by the level at which cyanosis disappears. The concentration to the patient should be about 10% more than the level at which cyanosis just disappears (see table below):

**Table-2 . Oxygen Concentration and Flow Rates**

Flow Rate (L/min)	Oxygen concentration (%)
0.25	24-28
0.5	28-34
0.75	34-41
1.0	40-50

- **Antibiotics:** The antibiotics (penicillin/ampicillin and gentamycin) can be given intramuscularly. The dosage of antibiotics is given in the table below:

**Table-3. Antibiotic Dosage in Severe Illness**

Frequency			
Antibiotic	Dose	Age <7 days	Age ≥ 7 days
Inj Benzyl Penicillin	50000 IU/kg/dose	12 hrly	6 hrly
or			
Inj Ampicillin	50 mg/kg/dose	12 hrly	8 hrly
AND			
Inj Gentamycin	2.5 mg/kg/dose	12 hrly	8 hrly

Give antibiotic for atleast 5 days and continue the treatment until the baby is well for atleast 3 days.

If there is no response to the first line antibiotics after 48 hrs. the baby should be referred to a health facility where specialist care is available.

- **Fluids and Feeding:** All sick newborns are at risk for hypoglycemia or dehydration due to poor feeding. In case the baby is unable to feed orally, then there is a need to start intravenous fluids. Table-4 provides you with some guidelines for fluid therapy in the newborn:

**Table-4 Fluid needs in the Newborn (ml/kg/day)**

	Age (days)					
	1	2	3	4	5	>5
Amount of fluid	60	80	100	120	140	150

During the first 2 days of life, the fluid given is 10% dextrose. From day 3 onwards, the fluid is administered as paediatric maintenance fluid (i.e. 1/6 saline in 10% dextrose).

- **Oral feeding** with breast milk must be started as soon as the baby can start accepting it. If the baby has difficulty in sucking then help mother to express her breast milk and feed by using nasogastric tube. Give about 20 ml/kg of breast milk at each feed 6 times a day.

### ***1.9.3. Very severe illness***

The newborns in this category are those who need to be urgently referred to a hospital with specialist care facilities. But before transfer the health staff must do the following:

- Give the first dose of antibiotic (Inj Penicillin/Ampicillin and Gentamycin) intramuscularly as per dosage schedule provided in Table-3 above.
  - If convulsions are seen then give Inj. Phenobarbitone intramuscularly in dose of 10mg/kg.
  - Send a referral slip.
  - Provide or help arrange a vehicle for transport.
  - If possible, the mother should be sent along with the newborn.
  - Give instructions to keep baby warm during transport by skin to skin contact, and adequate clothing.
- **Referral not possible:** If for some reason referral is not possible for the newborn diseases outlined above, then the treatment initiated must be continued and you as the attending physician should consider possibilities for managing the infant at the health centre.

### ***KEY MESSAGES***

- ♦ Wash your hand before handling the baby.
- ♦ Give exclusive breast-feeding.



- ♦ Do not give pre-lacteal feeds such as honey, water, gur, ghutti, etc.
- ♦ Keep baby warm. Check if body and feet are warm and pink.
- ♦ If danger signs present, contact health worker immediately.

- |  |
|--|
| <ul style="list-style-type: none"><li>♦ Not able to take feeds.</li><li>♦ Increased drowsiness.</li><li>♦ Difficult breathing/fast breathing (breathing 60/min. or more).</li><li>♦ Cold/hot to touch.</li><li>♦ Yellow staining of palm and soles.</li><li>♦ Convulsions.</li></ul> |
|--|

- ♦ Advise her to bring the child at 6 weeks to the health centre for immunization.
- ♦ Keep the immunization card carefully and encourage her to weigh the child at a near by health centre.
- ♦ Use no pacifier.



## **UNIT - 2**

### ***IMMUNIZATION***

#### **STRUCTURE**

- 2.1 Introduction
- 2.2 Common diseases prevented by vaccination and epidemiological features of VPDS
- 2.3 National immunization schedule
- 2.4 Role of medical officers in immunization
- 2.5 Maintenance of cold chain
- 2.6 Injection safety
- 2.7 Planning for outreach services
- 2.8 Monitoring for vaccination coverage, mapping drop outs and missed opportunities
- 2.9 Disease surveillance including AFP and out-break response immunization
- 2.10 Eradication of the polio, pulse polio immunization and intensified PPI
- 2.11 Elimination of neonatal tetanus
- 2.12 Reduction of incidence of measles
- 2.13 Adverse reactions of vaccines and remedial actions

#### **LEARNING OBJECTIVES:**

*At the end of the session, you should be able to:*

- Explain vaccine preventable diseases and their epidemiological features.

- Identify the age at which vaccines are to be given, number of doses and schedule
- Identify role of medical officers in immunization
- Maintain cold chain
- Demonstrate methods for sterilization of syringes and needles
- List ways of planning and monitoring immunization
- Describe surveillance including AFP and outbreak response immunization
- Describe important aspects of pulse polio immunization programme and polio eradication
- Identify methods to eliminate neonatal tetanus
- Identify methods to control measles
- Identify normal events and adverse reactions after immunization and action to be taken

## **2.1 INTRODUCTION**

Diphtheria, pertussis, tetanus, measles, poliomyelitis and childhood tuberculosis have high case fatality rates in infants and young children and can lead to lifelong sequelae in those who survive. Vaccines, for the prevention of cases of the above six diseases are safe, effective and affordable. Immunization of children and pregnant women is considered to be one of the most cost-effective public health interventions.

Although the number and scale of outbreaks has also declined, these have not been completely eliminated. The risk of large outbreaks will increase if coverage levels are not sustained. Sustaining high levels of immunization coverage is essential to meet the goals of elimination of neonatal tetanus, eradication of poliomyelitis and control of other vaccine preventable diseases.

The success of the RCH Programme is also dependent on the logistics and access developed under the immunization programme. A drop in immunization coverage levels and increase in the incidence of vaccine preventable diseases will adversely affect the credibility of the health staff and the health care system and have a



negative impact on the acceptance of other interventions included in the RCH Programme.

## **2.2 VACCINE PREVENTABLE DISEASES INCLUDED IN NATIONAL IMMUNIZATION PROGRAMME**

Tetanus

Diphtheria

Pertussis (whooping cough)

Poliomyelitis

Measles

Tuberculosis

***2.2.1 The epidemiological features of all vaccine preventable diseases are given in Table - I***

Table - I

## EPIDEMIOLOGICAL FEATURES OF VACCINE PREVENTABLE DISEASES

Disease	Causative agent	Mode of transmission	Reservoir	Incubation period	Communicability	Major complications	Specific treatment	Immunity
Poliomyelitis	Polio viruses types I, II and III	Faecally contaminated material Pharyngeal secretions	Man	7-14 days (range 3-25 days)	First week before & after onset of symptoms (range 3-6 weeks)	Residual paralysis of limbs paralysis of respiratory muscles can lead to death	None	Type specific lifelong
Measles	Measles virus	Air-borne Direct contact with nasal or throat secretions	Man	8-13 days	Slightly before prodromal period to 4 days after rash	Diarrhoea Pneumonia Otitis media Conjunctivitis Encephalitis Malnutrition	None	Life-long
Diphtheria	Corynebacterium diphtheriae	Air-borne Direct contact	Man	2-5 days	2 weeks or less	Respiratory obstruction Myocarditis Nerve Palsies	20,000-100,000 units of antitoxin & Antibiotics	Clinical disease may not provide life-long immunity
Pertussis	Bordetella pertussis	Air-borne Direct contact	Man	7-10 days (not exceeding 21 days)	Early catarrhal stage to 3 weeks after onset of symptoms	Brain damage Secondary Infection Malnutrition	Antibiotics	Prolonged
Tetanus	Clostridium tetani	Broken skin	Spores found in soil	3-21 days	Not transmitted directly	Death	Sedatives Muscle relaxants Antibiotics Tetanus immune globulin	Clinical disease does not give immunity
Tuberculosis	Mycobacterium tuberculosis M. bovis	Air-borne Raw milk	Man Cattle	4-12 weeks (may persist life-time as latent infection)	Variable (as long as tubercle bacilli being discharged)	Progressive pulmonary disease Meningitis Haematogenous (miliary)	Antimicrobials: Isoniazid and one or more of: Rifampicin, streptomycin ethambutol or pyrazinamide	Variable

## 2.3 NATIONAL IMMUNIZATION SCHEDULE

The vaccines must be given at the right age, site, dose and interval and the full course must be completed to give the best protection. The schedule is given as below:

Vaccine	Age	Dose	Route	Site
TT	Pregnant female	0.5 ml.	I.M	Deltoid
BCG	At birth or first contact	0.1 ml.	I.D	Deltoid
DPT	6 weeks, 10 weeks and 14 weeks	0.5 ml.	I.M.	antero-lateral aspect of thigh
OPV	6 weeks, 10 weeks and 14 weeks	2 drops	Oral	Oral
Measles	9 months ( 9 to 12 months)	0.5 ml.	I.M./S.C.	Deltoid/antero lateral aspect of thigh
DPT	16-24 months	0.5 ml 1 <sup>st</sup> booster	I.M.	Antero-lateral aspect of thigh
OPV	16-24 months	2 drops 1 <sup>st</sup> booster	Oral	Oral
DT	5 years	0.5 ml.	I.M.	Deltoid
TT	10 years	0.5 ml.	I.M.	Deltoid
	16 years	0.5 ml.	I.M.	Deltoid

- Tetanus toxoid 2 doses are given to pregnant women. The first dose is given at the first contact and the second dose 1 month later.
- Vit. A 100,000 IU 1<sup>st</sup> dose to be given with measles vaccine and 2<sup>nd</sup> dose 200,000 IU at the age of 16-24 months with DPT and polio 1<sup>st</sup> booster.

In institutional deliveries one additional dose of OPV to the newborn is given before discharge, called (O) dose and is not counted in schedule. A dose of B.C.G. is also given.

If the BCG was not given in the neo-natal period, then it may be given at 6 weeks, simultaneously with DPT and OPV.

- ❑ **Do not give injection on the gluteal region.**
- ❑ **Once vial opened must be discarded.**
- ❑ **All the vaccines can be given on the same day but in different sites.**

**MALNUTRITION, LOW GRADE FEVER, MILD RESPIRATORY INFECTIONS, DIARRHOEA AND OTHER MINOR ILLNESSES ARE NOT A CONTRA INDICATION TO IMMUNIZATION**

## **2.4 ROLE OF MEDICAL OFFICERS IN IMMUNIZATION**

1. You as medical officer of the PHC must ensure universal immunization of children in your areas and must monitor the programme to sustain quality of services. See that each child is immunized in your area.
2. You must also ensure that distribution of essential supplies are regular and that all sub-centres have adequate supplies. Sufficient number of syringes and needles should be available at each sub-centre.
3. You must provide additional assistance to pockets of low coverage. The type of assistance will depend on area-specific problem. If the low coverage is due to a long-term vacancy, special immunization camps may have to be organized by mobilizing resources from other areas. If the coverage is low due to poor acceptance of services, IEC activities may have to be stepped up.



4. You must also monitor performance and analyze surveillance reports.
5. The peripheral health staff must receive support from you if there is any adverse reaction following immunization. Monitoring of adverse events following immunization is important to detect programmatic lapses.
6. The vaccine issue register must be checked periodically to ensure that the vaccines are being taken out only on scheduled days. The temperature record forms of the ILR and the freezer must be checked weekly by you.
7. You must ensure:
  - ☐ Universal immunization coverage to all infants starting at 6 weeks of age or as early as possible thereafter.
  - ☐ That the children receive full course of the vaccine by reducing dropout rates.

<p><b>THE DAY AND TIME OF IMMUNIZATION SESSION SHOULD BE FIXED AND SHOULD BE PROMINENTLY DISPLAYED AND KNOWN TO THE COMMUNITY</b></p>
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- ☐ That the vaccines given to the children are potent by maintaining an efficient cold chain system.
- ☐ Regularity of services by having a 'fixed-day' and 'fixed-site' immunization sessions so that community is aware of the time and place and vaccine supplies to the periphery can be monitored.
- ☐ All vaccines must be available at each immunization session.
- ☐ Vials opened for an immunization session are NOT REUSED for a subsequent session.
- ☐ Vaccines are issued on the day of the session or the previous evening only after checking that the FOUR ice packs of the vaccine carrier are fully frozen.

- ☐ Vaccines which can be utilized during the day only are to be issued.
- ☐ Single sterile syringe and needle is used for each injection. The syringes and needles must be sterilized before reuse.
- ☐ Mother-infant card are issued to all pregnant women and continued for use of the infant. The Mother-Infant Immunization Card, which includes items on ante-natal care, iron and folic acid and Vitamin A is an important major tool for providing information to the family and must be filled at the time of providing these services. The counterfoil must be preserved by the health workers and utilised for follow-up of the "drop-outs". Ensure that drop-outs are traced and appropriate immunizations given.

- When a dose of a vaccine is given, the doctor/ANM should explain clearly to the mother the nature of vaccine, the number of doses needed, the disease to be prevented, management of minor adverse reactions and the date due for the next session of immunization.
- Dropouts must be traced and appropriate immunization are given.

## 2.5 MAINTENANCE OF COLD CHAIN MAINTENANCE

The vaccines loose potency when exposed to heat, some vaccines are more sensitive to heat then others e.g., polio vaccine is the most sensitive to heat, while tetanus vaccine is the least sensitive. Hence, maintenance of cold chain at recommended temperature is essential for transporting and storing of vaccines from the manufacturer to the point of use.

*The order in which vaccines lose their potency when exposed to heat are as follows:*

1	Polio	2	Measles
3	BCG	4	DPT
5	DT	6	Tetanus

- Once the potency of the vaccine is lost, it cannot be regained even after putting it back into a refrigerator or fridge.
- All vaccines retain their potency at temperatures between +2 degree and +8 degree celsius, so the vaccines must be transported and stored at recommended temperatures to and from district hospitals and PHC.
- For long-term storage, measles and polio vaccines are kept at sub-zero temperature. If freezers are available, these vaccines should be kept in them.
- DPT, DT, TT and BCG vaccines should not be frozen. BCG ampoules are likely to crack when frozen.

### ***2.5.1 Cold Chain Equipments***

***These are:***

- Large deep freezers and large ice-lined refrigerators (ILRS) of 300/240 litres.
- Small deep freezers and small ILR.
- Cold boxes and vaccine carriers.
- Voltage stabilizers.
- Ice packs.

### ***2.5.2 Ice-lined refrigerators (ILRs)***

ILR has top opening and lined with pipes of ice or ice packs which will maintain the temperature of the vaccines in case of power failure. Once they are cold they are effective even with an electricity supply of 8 hours in a 24 hr. cycle.

There is no freezer compartment in ILR. Hence, normally, they cannot be used to make ice or freeze ice packs for transport purposes. Some varieties such as the Electrolux ILR can be set to act as a freezer to make ice packs. Before setting it to this mode the DPT, DT, TT and BCG vaccines should be transferred to another ILR or into a cold container with ice.



Do not do it if you do not have a suitable alternate cold storage space. Vaccines cannot be kept at room temperature.

The bottom of the ILR is the coldest part. DPT, DT, TT and BCG vaccines **should not be placed** on the floor of these refrigerators.

It is better to use the ILR as a storage for vaccines even if there is another refrigerator in the centre as it maintains the cold chain better than an ordinary refrigerator especially when there are periodic power failures.

Collection of vaccines from various PHCs/field visits should be coordinated so that the ILR is not opened frequently.

### ***2.5.3 Deep freezers***

These are used for storing polio and measles vaccine and for freezing ice packs to be used when necessary with the vaccine carriers.

A vestfrost ILR and a deep freezer are supplied in the programme. The ILR is used for storing DPT, DT, TT and BCG vaccines and diluent. Both are connected to a common voltage stabilizer.

### ***2.5.4 Conventional refrigerator***

Vaccines should be properly stored in the refrigerator. Stock the vaccines neatly taking care to allow space to permit the cold air to move between the various boxes.

Keep the measles and polio vaccines in the TOP shelf, just below the freezer. If there is a larger amount these two vaccines can be stored in the freezer. However, they should not be frozen and thawed repeatedly as this will decrease their potency.



Keep DPT, DT, TT, and BCG on the MIDDLE shelf so that they are cold but never frozen. Frozen vaccine and thawing cause loss of potency.

Keep the diluent for the BCG and the measles vaccines in the refrigerator but not in the freezer.

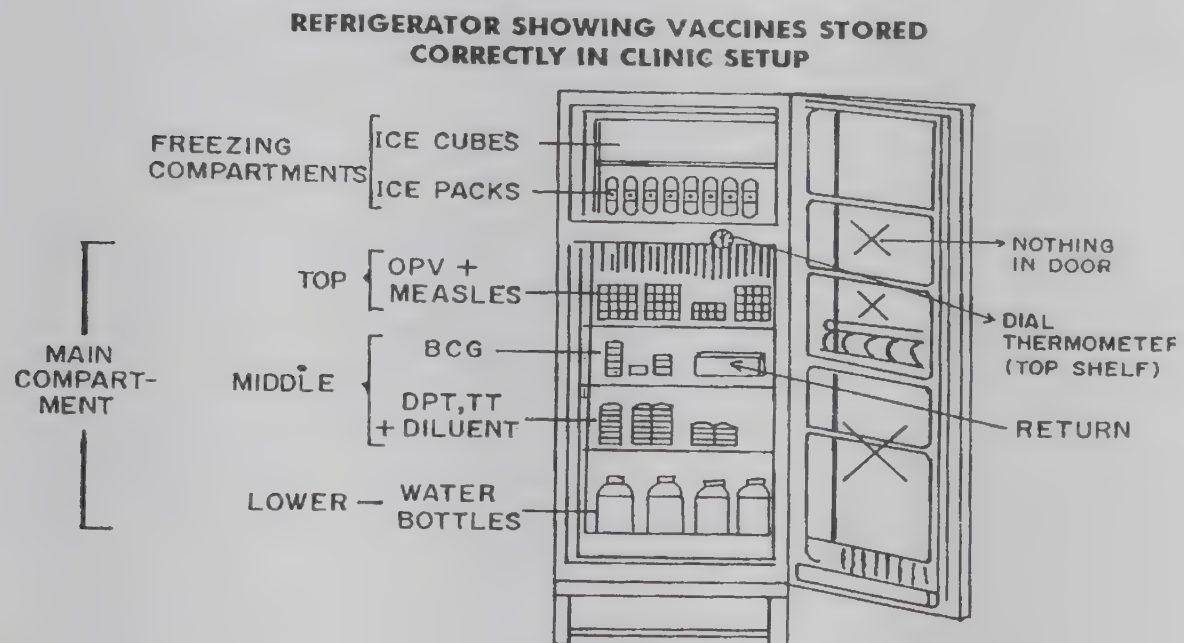


Fig.1

Have a separate box for keeping unopened vaccine vials that are taken in the vaccine carrier to the field area and brought back properly. These should be consumed first at the earliest opportunity. Place a rubber band or put one red dot or crosses on the vials that have been taken out twice. So the latter first, the next time. Try to plan better next time so that vials are not taken out and returned to the refrigerator more than once.

Keep plastic bottles of water or ice packs on the lower shelf to help to maintain the temperature in cases of power failure.

Keep vaccines in fixed places in the refrigerator and plan what has to be done and which items have to be taken out before opening the door. In this manner the necessary vials can be taken out in the minimum time possible and door closed quickly again.

Check the temperature of the refrigerator twice a day, when you commence work and when you leave. It should be between 2°C and 8°C. **Take steps immediately**, if the temperature is above 8°C or below 2°C. Hence you must have a dial thermometer in the refrigerator and the booklet of 12 forms for recording the temperature on the top of the refrigerator.

**Defrosting the Refrigerator:** Refrigerators should be defrosted periodically as the temperature maintenance is poor if a thick layer of ice accumulates in the freezer. Defrost it if the ice is more than 6 mm thick. Many machines have an automatic defrost button/switch. Press the button and fold back the back flap of the tray below the freezer. This will help the water formed from melted ice to accumulate in the tray. When the ice has melted the refrigerator will restart automatically. Do not try to break off the ice with a sharp instrument as it will damage the freezer chamber and affect cooling. After defrosting remember to fold back the flap of the tray so that cold air can circulate properly.

**Defrosting the ILR :** Prepare ice packs for the cold box before defrosting the ILR. Remove vaccines to the cold box or another refrigerator before defrosting so that vaccines are not exposed to temperatures above 8°C. Switch off the ILR, clean it with a clean cloth and dry the ILR. Switch it on again.

### ***2.5.5 Vaccine carriers***

The carriers are containers with thick walls and lids made of a special material which do not allow the heat to pass through it easily. Hence they can keep vaccines that are already cold and maintain their low temperature for a short time.

They are used to carry vaccines from the centre to the places where the children can be immunized.

Use frozen ice packs to keep the vaccines cold in the carrier.

These carriers cannot make vaccines cold. Only the refrigerators can do this.

Do not leave the lid open and do not expose the carriers to the sun.

Do not sit on them. Keep them clean and dry.

Duration of keeping vaccines in the vaccine carriers. Vaccines are usually kept in the carrier for one working day.

Vaccines can, however, be kept in the carrier for 48 hr. if:

The lid is kept tightly closed.

All ice packs and cubes are left inside.

The carrier is in the shade and away from the heat.

The ice packs have not melted fully.

Smaller "day" carriers are also available and are used to carry a few vials for one session.

Each can hold 8-10 vials and ice cubes and will keep vaccines cold only for 6-8 hr.

At the immunization site keep opened vials in a cup of ice or on an ice pack during use.

### ***2.5.6 Ice packs***

- Ice packs are used to line the vaccine carriers to keep the vaccines cold. They consist of flat plastic bottles filled with water. They are prepared by keeping these water filled containers in freezers or in the freezer compartment of a refrigerator so that the water freezes.

#### **Preparation of Ice Packs**

- Fill the ice pack with water upto the mark and close the cap tightly.
- Do not add salt to the water in the ice pack when placed in the freezer, it will lower the temperature to sub zero level which is not recommended for DPT, DT, TT and BCG



- Shake it and invert it to check that it is not leaking. If it does so, open the cap and reapply it tightly and check again. Change it if it leaks.
- Place the ice pack on its side in the freezer, initially placing 16-24 packs and another lot the next day.
- Do not place more than 6 packs for freezing in the freezer compartment of an ordinary refrigerator. Keep the packs vertically on their sides and not on flat. This will decrease the time taken for freezing.
- Keep the packs overnight to let the water freeze solid.
- When the ice packs have to be taken out, just before placing them in the carrier keep them out for a few minutes to melt any ice bits that may be frozen outside the packs. Then wipe them dry and place in the carrier.
- Place newspaper or cardboard between the ice packs and vials of DPT, DT, TT, and BCG so that they do not freeze by being in direct contact with the ice packs and get damaged.
- Place the diluent for vaccines in the vaccine carrier. Although they are water or saline and will not get destroyed at room temperature, it is essential for them to be cold as well before administration to children.

Rarely you may use a thermocol box with ice cubes instead of the regular vaccine carrier. For this do the following:

- Place ice cubes in plastic bags.
- Place the ice bags at the bottom of the carrier.
- Place the vials of vaccines on the ice bags.
- Place another layer of ice bags on the top of vials.

## **2.6 STERILIZATION OF EQUIPMENTS**

Sterilization of needles and syringes, and other equipments used in an immunization session is absolutely essential. If proper sterilization procedures are not followed, chances of adverse reaction will increase and the credibility of the programme will



suffer. If the needles and syringes are not properly sterilized there are chances of transmission of various infections, including HIV/AIDS.

Before sterilization items must be thoroughly cleaned; as germs can survive in dirt or organic matter during the process of sterilization. Wash separating the syringe and plunger soaking them in clean water. Dissolve soap or detergent in water. Draw this solution into the syringe and needle and squirt it out. Rinse it out in a similar manner several times with clean water making sure that all traces of soap are removed. Clean the insides of syringes well and check them before commencing sterilization wash all containers the forceps too.

**Do not use antiseptic solution to sterilize syringes and needles.**

Sterilization by steam autoclaving with temperature 121<sup>0</sup> to 126<sup>0</sup> C for 20 minutes is sufficient to kill the germs.

If autoclaving is not possible syringes and needles may be boiled. Keep boiling for 20 minutes continuously.

There are several ways of sterilizing syringes and needles. In the programme, following methods are used:

1. Steam sterilizer (double rack)
2. Autoclave
3. Boiling

### ***2.6.1 Steam sterilizer (double rack)***

All sub-centres have been provided with one steam sterilizer. It consists of following parts: sterilizer base, syringe rack, syringe rack lid and sterilizer lid.

#### **2.6.1.1 How to use a steam sterilizer**

Clean the syringes and needles with mild soap water and rinse them with plain water.

Place the barrels, pistons and needles in the holes of the syringe rack.

Put the rack lid on the loaded rack and press the clip so that it fixes with the rack.

Fill water in the sterilizer base upto the mark.

Place the loaded sterilizer rack into the sterilizer.

Put the sterilizer lid on the sterilizer base, matching the arrow marks on the base and the lid and turn it clockwise to close it.

Put the sterilizer on stove.

As steam starts coming out of pressure valve, wait for 5 minutes, reduce the flame.

Keep it on flame for another 15 minutes.

Remove the sterilizer from the stove and allow it to cool.

Open the lid only when the syringes and needles are required.

Turn the lid upside down and keep the forceps on it.

Use the forceps to assemble the syringes.

### **2.6.2 Autoclave**

Autoclaves have been provided to most of the PHCs , CHCs and other hospitals. They are used for sterilizing large number of syringes and needles.

#### **2.6.2.1 How to pack (for autoclaving)**

*Packing syringes:*

- Wrap each set of barrel, piston and needles in gauze or cotton cloth.
- For this, cut pieces of gauze 20 cms long from a roll.
- Use one piece of gauze for each syringe.
- Check that the barrel and the plunger are a pair and that the plunger fits into barrel properly.
- Wrap the gauze first around the plunger and then round the barrel.
- Pack the gauze-wrapper glass syringes neatly in the container for sterilisation.

*Put two pairs of forceps into the steriliser.*

### **2.6.2.2 How to use autoclave**

Put water upto the mark.

Place autoclave on a stove.

Open side holes of the dressing drum.

Put loaded drum in the autoclave.

Put the lid of the autoclave on the body and tighten the screws diagonally, i.e. tighten the screws opposite one another before going on to the next pair.

After sometime the needle on the pressure gauge starts moving.

When it registers 15 lb. pressure (p.s.i) , note the time. Let it remain at 15 lb pressure for 20 minutes.

Put off the burners.

Let it cool/let of the steam.

Remove the lid by the loosening the screws on the lid.

Remove the dressing drum and close the side holes by moving the side wall cover and lock it.

### **2.6.3 Boiling**

Only when autoclaving or pressure sterilizing is not possible for want of equipment, syringes and needles are sterilised by boiling and allow syringes and needles to cool before use, keeping it covered.

Since it takes long time for syringes and needles to cool, try to sterilise them well in advance of the session. Never use hot syringes and needles as heat will destroy the vaccines.

## **2.7 PLANNING FOR OUTREACH SERVICES**

### **2.7.1 Why it is important?**

- Planning for outreach services is required for achieving the targeted coverage and to trace out the dropouts.
- Planning to be done to identify who will carry out and where, when and how these will be performed.



- Planning will ensure that activities at different levels do not overlap and are carried out in a co-ordinated manner.
- Ensure supply of materials (vaccines, drugs and equipments) and monitoring them that they are reaching the beneficiaries.
- Promoting community participation is essential to achieve optional services on a regular and sustained basis.

### **2.7.2      *Preparation of workplans***

A work plan should be prepared in such a way that activity (immunization session) to be performed at a particular level and in a given timeframe. You should help to plan out for outreach services under your direction as follows:

- The health workers (F) in a sub-centre should have the informations on number of villages (including outreach pockets), population, and number of beneficiaries under her sub-centre and distance to be covered between her sub-centre and the villages.
- Outreach pockets (hamlets) are to be clubbed with the nearest village.
- Arrangements are to be made to send vaccines, drugs and equipments on the day of immunization from the nearest vaccine supplied depots.
- The day and time of immunization should be fixed after consultation with community leader. Once fixed should be prominently displayed at important places.
- To sustain high level of coverage, sessions are to be carried out according to fixed schedule.
- Immunization session should be held at least once in a month at a fixed centre in an outreach place.
- Any health worker should be identified and given responsibility to carry vaccines in cold chain from the vaccine storage point to the outreach centre.
- Should have sufficient syringes and needles, so that one syringe and one needle for every beneficiary after ensuring proper sterilization.



**Prominently display the fixed day and fixed time, fixed place, in sub-centre for immunization session in an outreach place**

### ***2.7.3 Vaccine requirement***

Estimation of vaccine requirement at various level is essential for proper implementation of the programme. While calculating the requirement following factors are to be considered:

Number of beneficiaries.

Number of doses of each vaccine.

Wastage multiplication factor.

Number of sessions.

For calculation of vaccines refer to management module.

Additional OPV doses for containment vaccinations and mop-up rounds also needed. These have to be calculated on the basis of under 3 population and area to be covered.

### ***2.7.4 Monitoring vaccine supply and utilization***

It is essential that vaccine issue is regularly monitored to see that the vaccines are issued on the day of session and that the vaccines issued tally with the estimated number of beneficiaries likely to attend the session. Monitoring of vaccine utilization will help to assess service delivery.

Vaccine utilization should be periodically tallied with the number of children immunized. If a sub-centre reports high vaccine utilization rates, further investigation should be done to rule out:

- False reporting of immunization performance .
- Reuse of opened vials of vaccines.
- Duplication of reported performance.

Vaccines should be issued only in cold chain.  
Vaccine stock and issue register must be kept up-to-date.

2.7.5 Vaccine Vial (OPV) should be monitored before use as given below (Fig.2):

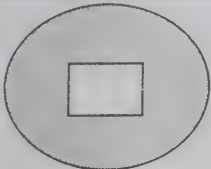
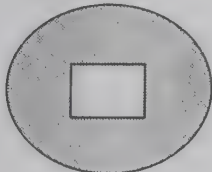
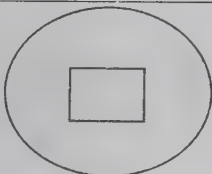
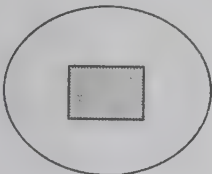
Vaccine Vial Monitor (VVM)	
	<p>If the square is lighter than the circle. If the expiry date is not passed. <b>USE the vaccine.</b></p>
	<p>If the square is dark but lighter than the circle. If the expiry date is not passed. <b>USE the vaccine.</b></p>
	<p>The square matches the circle. <b>DO NOT USE the vaccine.</b> <i>Inform your Supervisor.</i></p>
	<p>The square is darker than the circle. <b>DO NOT USE the vaccine.</b> <i>Inform your Supervisor.</i></p>

Fig. 2

### **FOLLOW FIRST-IN FIRST -OUT RULE**

Vaccines received earlier or with short expiry date should be used first.

## **2.8 MONITORING FOR VACCINATION COVERAGE, MAPPING DROPOUTS AND MISSED OPPORTUNITIES**

*You should ensure the following:*

- Maintain PHC records and review sub-centres records for coverage of immunization and dropouts.
- Regularly send report to district level.
- Plan your personal supervisory visit to out-reach places.
- Conduct regular meeting with staff, give them feedback, updated and guide them and solve problems if any, during meeting.
- Check vaccine issue register.
- Coverage evaluation survey.
- Prepare detailed map showing important land-mark like street houses, temple, church, mosque, school, shops etc.
- Workers pass through the area and identify housing cluster (hamlets) and out-reach houses.
- Mark priority houses i.e a house in which a child has not taken vaccination at all/missed a dose/a child has adverse reaction after immunization/neonatal death/AFP case.
- Clearly demonstrate such houses and allot to health workers for home visit.
- Prepare copy of the map and distribute to all teams/supervisor for action.

## **2.9 DISEASE SURVEILLANCE INCLUDING AFP AND OUTBREAK RESPONSE IMMUNIZATION**

*Surveillance is the regular collection and use of data on:*

- The number of cases and deaths due to the diseases covered under the RCH Programme.
- Age-group and geographical areas affected.
- Type and rates of complications following the above illnesses.
- Case fatality rates.
- Impact of services.

The minimum information that must be collected at all levels of the health care system is the number of cases and deaths. This information must be collected for each disease separately.

Besides collection of data on diseases, information must also be collected on severe adverse reactions following immunization.

Data on outbreaks are collected and analyzed separately. Investigation of outbreaks is useful in identifying factors that led to the outbreaks and evaluating efficacy of the control measures. Such investigations provide useful experience for undertaking appropriate action in future.

For some diseases which are relatively rare and diseases which are planned to be eradicated or eliminated, detailed information on each reported case is essential. Diseases for which detailed information must be collected are poliomyelitis, neonatal tetanus and measles (if measles immunization coverage levels are above 85%).

The following should be listed in a register (LINE LIST) and contain the following information:

- Name
- Name of father or mother
- Age
- Sex
- Date of onset of symptoms
- Date of examination
- Date of reporting
- Immunization status
- Full Address
- Diagnosis
- Outcome
- Laboratory investigations (if conducted)
- Follow-up action taken
- Hospital/health centre
- Hospital registration number



Line listing is necessary to check for duplication in reported cases, assess immunization status, spot map areas of high risk and to make decisions on follow-up action to be taken (This will depend on the period between onset of symptoms and the receipt of the report). Follow-up visits are often necessary to confirm diagnosis, especially of poliomyelitis. Full address is necessary to trace children.

***2.9.1 Standard case definition of vaccine preventable diseases is given in Table - II***

**Table - II**

<b>CASE DEFINITION OF VACCINE PREVENTABLE DISEASES</b>				
<b>Classification</b>	<b>Suspect</b>	<b>Physician confirmed</b>	<b>Laboratory confirmed</b>	
Personnel	Lay Public/MPWs	Medical Officers	Medical Officers	
Methods	History	History + Clinical Investigations	Laboratory Identification	
Neonatal tetanus	Normal suck or cry for first 2 days Onset between 3-28 days Inability to suck Stiffness or convulsions	Trismus Generalised muscle rigidity Convulsions	None	
Tetanus	Injury or ear infections Difficulty in opening mouth Stiffness or convulsions	Trismus Generalised muscle rigidity Convulsions	None	
Poliomyelitis	Fever Abrupt onset of weakness or paralysis of the leg(s) or arm(s). No progression of paralysis after first three days. Paralysis not present at birth or associated with serious injury or mental retardation.	Flaccid paralysis No sensory loss Muscle tenderness Absent or depressed deep tendon reflexes Asymmetrical findings Wasting of affected muscles (late findings) Residual paralysis 60 days after onset of illness should be added as a criteria in areas of low incidence	Positive virus culture for polio virus Positive serology (4-fold or greater rise in serum polio antibody titre)	

Measles	Generalized blotchy rash lasting 3 or more days fever. Cough, running nose or red eyes Exposure to a suspect case of measles in the previous 2 weeks or an epidemic of measles in the area.	Generalised maculopapular rash. Fever 38°C. (101 'F) or more Cough, coryza, conjunctivitis or Koplik's spots.	Positive serology (4 fold or greater rise in serum antibody titre)
Whooping cough (pertussis)	Cough persisting 2 weeks or more. Fits of coughing which may be followed by vomiting typical 'whoop' in older infants and children. Exposure to a suspect case in previous 2 weeks or epidemic of whooping cough in the area.	Prolonged coughing followed by apnoea cyanosis or vomiting. Typical 'whoop' in older infants and children. Subconjunctival haemorrhages.	White blood cell count with 15,000 lymphocytes / cu mm or more (supportive of diagnosis but non-specific) Positive culture or immunofluorescence of nasopharyngeal secretions for Bordetella pertussis bacteria.
Diphtheria	Sore throat (with or without difficulty in swallowing) mild fever. Greyish-white membrane in throat (with or without difficulty in breathing). Exposure to a suspect case of diphtheria in the previous 1 week or epidemic of diphtheria in the area.	Greyish-white membrane in throat (with or without difficulty in breathing). Acute pharyngitis, naso-pharyngitis or laryngitis Airway obstruction. Myocarditis or neuritis (paralysis) one to six weeks after onset of symptoms.	Common alternative diagnosis excluded by appropriate test: negative throat culture for group A streptococci, negative blood test for mononucleosis Positive culture of Corynebacterium diphtheriae

Tuberculosis (childhood)	Listlessness Loss of weight Prolonged low grade fever Tuberculosis in family or close neighbours	BRAIN – Dazed condition, stiffness of neck, convulsions, severe headache, fever GLANDS – Lymphadenopathy in neck and axilla which may suppurate LUNGS – Fever, cough, weakness, poor appetite BONES – Fever, pain, swelling and crippling of joints And any one of the following: Positive reaction on tuberculin testing (>10 mm induction) Favourable response to anti-TB therapy	(demonstration of toxin production recommended but not done)
		Microscopy or culture of tubercle bacilli, as identified mycobacterium tuberculosis from secretions or tissues. Suggestive radiological appearances on films of chest, bones or joints. Suggestive historical findings in biopsy material.	



### ***2.9.2 Quality of data***

The quality of data collected depends on many factors such as regularity of the reports, timeliness with which these are received, completeness of data submitted and diagnostic criteria. If these factors are not checked and corrected, they can often lead to fallacious conclusions and ineffective use of surveillance data.

### ***2.9.3 Regularity of reports***

Surveillance data are generally submitted once in a month. All reporting sites (hospitals, health centres, sub-centres and others which have been designated as reporting sites) must submit monthly reports. If no cases are seen, a 'nil' report should be submitted. At the PHC and district levels, the receipt of the report should be monitored. A single missing report from a large hospital or during the seasonal peak can artificially reduce the number of cases and deaths reported from an area.

### ***2.9.4 Timeliness of the reports***

Reports should be received within a reasonable period of time. The effectiveness of follow-up action depends on the promptness with which these are undertaken. A date should be fixed at each level for receiving the monthly reports.

Cases of poliomyelitis and neonatal tetanus must be notified immediately to the local medical officers.

A cluster of cases, sudden increase in cases or even a single case from a tribal area, or other vulnerable pockets with higher mortality rates and inadequate health care, should be notified immediately.

### ***2.9.5 Diagnostic criteria***

Uniform criteria of diagnosis is important for diseases which have a wide spectrum of clinical presentation and there are other

clinical conditions similar to the diseases being reported. Uniform criteria are also important as in our country the cases are likely to be seen by physicians and health workers with varied clinical background and experience. The standard case definitions have also been provided in Table II of this module for ready reference. Be sure that all the reporting sites in your area know and use these case definitions.

### ***2.9.6 Sources of data collection***

#### **2.9.6.1 Hospitals**

Hospitals usually see a large proportion of the total cases. Since such hospitals have experienced physicians, the quality of diagnosis is relatively good. Hospitals normally maintain detailed case records and can provide line lists of cases.

Data from the hospitals can be used to study diseases trends in the area, immunization status, ORT use rate, sex ratio and age-groups. Information from the hospitals can be used spot-mapping of cases by residential areas for the identification of high risk pockets. Hospitals can also provide an early warning of an outbreak if the number of cases suddenly increase.

#### **2.9.6.2 Health Centres**

It is important that all primary health centres and community health centres are involved in the surveillance system so that cases of poliomyelitis or neonatal tetanus are not missed and completeness of reporting of other diseases is improved. Moreover, follow-up action in the field will be taken at these levels.

#### **2.9.6.3 Peripheral Health Staff**

The peripheral health staff should be alerted to report cases of poliomyelitis and neonatal tetanus so that no cases are missed, especially cases who did not report for treatment or reported too late. Many cases of neonatal tetanus die at home without seeking

medical care and information which is limited only to the hospitals and health centres may lead to gross under-estimation of incidence.

The health personnel must report a sudden increase in cases or a death due to a vaccine preventable disease or diarrhoea so that possible outbreaks could be identified early. This is particularly important if the outbreak is localized and as such early warning signs may not be received from other sources such as the hospitals.

Information collected through the peripheral health staff is called **ACTIVE SURVEILLANCE** as additional efforts are made to seek information on cases and death in contrast to **PASSIVE SURVEILLANCE** which relies on information of cases which seek medical treatment in hospitals and other health facilities.

#### **2.9.6.4 Private Practitioners**

Private practitioners should, however, be approached to report cases of poliomyelitis and other cases of acute flaccid paralysis in children since the objective is not to miss even a single case. Their help should be sought for ensuring **COMPLETE AND TIMELY** reporting of cases of poliomyelitis.

Private practitioners can also help in the early identification of outbreaks if a sudden increase in cases is seen. This would be particularly helpful if outbreaks are localized. Such outbreaks may not affect hospital data and early warning signs may be limited.

#### **2.9.6.5 Specialized Departments such as Rehabilitation Centres, Ophthalmic Departments**

Usually information collected from hospitals, health centres and the paramedical personnel is adequate for programme purposes. However, for achieving the goal of polio eradication it is important that **NO CASE IS MISSED** and selected departments such as rehabilitation centres and physio-therapy units can be an additional source of information on poliomyelitis.



Similarly, ophthalmic departments can provide information on the presence or absence of cases with overt ocular signs of vitamin A deficiency seeking treatment in these departments.

#### **2.9.6.6 Disease Surveys**

As an alternative to disease surveys, an active search through key informers for lame children and neonatal deaths can be made in the high risk pockets. If no children with residual polio paralysis with onset of paralysis during the year(s) under reference or neonatal tetanus deaths are found in these pockets it will further confirm the absence of disease in the PHC area or the district. Such active search should supplement and not substitute the surveillance system. The data should not be extrapolated or used for estimating rates.

#### **2.9.7 *Problems encountered in data collection***

**2.9.7.1 Not all hospitals submit data regularly or in time**

**2.9.7.2 Not all cases are seen in the hospitals**

**2.9.7.3 Some cases are seen by more than one hospital/health facility and the same case may be reported more than once (duplication)**

**2.9.7.4 Criteria of diagnosis is not uniform**

**2.9.7.5 Mandatory reporting**

**2.9.7.6 Surveillance of acute flaccid paralysis**

The goal to eradicate poliomyelitis by the year 2010 adopted under the Universal Immunization Programme has retained its position of high priority under the newly launched RCH Programme.

#### **(i) POLIO VACCINE – IMPORTANT CONSIDERATIONS**

OPV is the vaccine of choice for polio eradication. When used in PPIs, it is the only proven strategy that will allow India to achieve



the global goal of polio eradication by the year 2010. OPV is also the only vaccine effective in controlling outbreaks. OPV induces better intestinal immunity to prevent spread of infection with wild poliovirus; is much easier to administer because it is given by mouth; is much cheaper; and has the ability to induce immunity in unimmunized contacts.

### **Dosage and storage**

Dosage of OPV is usually 2 drops (0.1 ml) or the dosage recommended by the manufacturer. For individual protection the number of recommended doses is four, usually given at 6, 19 and 14 weeks, and at the time of booster immunization with DPT vaccine. Seroconversion may be improved by increasing the number of doses. Doses should be administered at least 4 weeks apart. For purposes of the polio eradication programme additional pulse immunization doses are required. There are virtually no contradictions to immunization with OPV.

At the PHC level, unopened vials of OPV which have been transferred from the fridge to a vaccine carrier for outreach activities should be replaced in the fridge at the end of the working day. The maintenance of cold chain and the potency of OPV can be gauged by looking at and interpreting the VVM that is affixed on all OPV vials. The health workers should be adequately trained in interpreting the VVM.

### **Administration strategies**

Since no vaccine has a 100% efficacy, not all persons given OPV through the routine services will be protected against poliomyelitis. The higher prevalence of other circulation non-polio enteroviruses in countries with warmer climates is one reason why 20-30% of the children immunized with OPV may remain unprotected against poliomyelitis. Other reasons include the difficulty in maintaining adequate cold chain and hygiene.

A dose at birth is highly recommended for institutional births; it is not counted as part of the primary series and is referred to as "OPV Zero". Longer intervals than the recommended 4-8 weeks between doses do not require restarting the schedule. Polio vaccine may be given simultaneously with any other childhood immunization, and there is no limit to the number of doses, which may safely be given.

## **(ii) ACUTE FLACCID PARALYSIS**

Acute flaccid paralysis means that paralysis is of acute onset (<4 weeks) and the affected limb or limbs are flaccid, i.e. floppy or limp. Tone is diminished as evidenced by examination, palpation or passive movement of joints, but sensation is not affected.

**A case of AFP is defined as any child aged <15 years who has acute onset of flaccid paralysis for which no obvious cause (such as severe trauma or electrolyte imbalance) is found, or paralytic illness in a person of any age in which polio is suspected.**

It should be stressed that surveillance is carried out for all cases of acute flaccid paralysis (AFP) and not just for poliomyelitis. Therefore, all AFP cases should be reported, regardless of the final diagnosis. Because paralytic poliomyelitis is one cause of AFP, maintaining a high sensitivity of AFP reporting will ensure that all cases of paralytic poliomyelitis are detected, reported, and investigated, resulting in preventive control measures to interrupt transmission of disease. The aim of AFP surveillance is to detect poliovirus transmission and the earlier stool is solicited the greater the chance that poliovirus may be detected.

Experience in other parts of the world indicates that at least 1 case of non-polio AFP occurs for every 100,000 population children aged <15 years per year. This is referred to as the "background" rate of AFP among children. The other non-polio causes of AFP, such as Guillain-Barre Syndrome (GBS), transverse myelitis (TM),

traumatic neuritis (TN), account for these background rate, regardless of whether acute poliomyelitis exists in the community.

Special effort should be made to obtain 2 stool specimens from AFP cases within 14 days of paralysis onset 24-48 hours apart. **Outbreak response efforts should** be started promptly without waiting for the laboratory results, which might take up to 8 weeks. All cases that are classified as “discarded”, not polio, require thorough justification and should be reported with the final diagnosis. When a case of AFP is seen late in the field, stool specimens may be collected up to 60 days after onset of paralysis. The chances of finding poliovirus in the stool after that length of time are extremely remote. However, it should be noted that with a functioning and sensitive surveillance system for AFP, late detection of AFP cases indicates surveillance failure. The aim should always be to detect AFP cases early so that adequate specimens can be collected.

**Adequate specimen can be defined as 2 specimens, at least 24 hours apart, collected within 14 days of paralysis onset; each of adequate volume (8-10 g) “a thumb sized” and arriving at a WHO accredited laboratory in good condition. Good condition means no desiccation, no leakage adequate documentation and evidence that the cold chain was maintained.**

**Surveillance is carried out for all cases of acute flaccid paralysis, not just for poliomyelitis.**

An AFP case in any case of acute flaccid paralysis in a person under 15 years of age for any reason other than severe trauma, or paralytic illness in a person of any age in which polio is suspected. The classification of AFP is temporary. Within 90 days of onset the case should be finally classified as polio, polio compatible or “discarded” as not polio.



**Case of AFP are classified as polio if:**

- *Wild poliovirus was isolated from any stool specimen.*

**Case of AFP without isolation of wild poliovirus may be classified as “polio compatible” if:**

- *Stool specimens were inadequate.*

**AND**

- *Residual weakness was present 60 days after onset of paralysis or 60-day follow-up was not done (due to death or absence).*

**AND**

- *“expert review” concludes that these cases could not be discarded as “non-polio” based on available data.*

## **STRATEGIES**

- ❑ Reach and sustain coverage level > 85%.
- ❑ Identify ‘at risk’ pockets.
- ❑ Conduct ‘mop-up’ rounds in low transmission period.
- ❑ Strengthen surveillance.
  - Ensure timely and complete reporting of cases of acute flaccid paralysis.
  - Improve clinical diagnosis to differentiate polio from non-polio cases.
  - 60 day follow-up of suspect polio cases to confirm diagnosis.
  - Virus isolation to confirms diagnosis.

### **2.9.7.8 Reporting units**

Reporting units must be identified to include all centres where paralytic cases might be brought for diagnosis, treatment or rehabilitation. This network of reporting units will comprise the basic framework of the surveillance system.



- i. **Network of AFP reporting units:** All health facilities, including hospitals, community health centres, and private clinics and nursing homes, likely to see AFP cases, must be listed and enrolled as reporting sites. It is important that each one of these units reports weekly, even when no case of AFP has been identified (nil reporting).
- ii. **Initial identification and reporting of AFP cases:** Each reporting facility should identify one individual (and one or two alternates) as “nodal officer” who will be responsible for identifying and immediately reporting cases of AFP to the District Immunization Officer by the quickest means possible (telephone or fax). Verbal communication should be followed by written notice as soon as possible. The DIO must record all AFP cases reported in a standard AFP line listing format.
- iii. **60 day follow-up:** The District Immunization Officer must re-visit every case of AFP 60 days after the onset of paralysis to confirm the presence or absence of residual weakness. Minimum level of residual weakness can usually be detected by the measurement of midarm or mid-thigh circumference which will reveal wasting on one side as well as by the asymmetry in the skin folds on medial aspect of the thighs.
- iv. **Weekly reporting:** At the end of each week, the DIO should report to the State EPI Officer the line lists of all new AFP cases reported to the DIO that week. This is done to summarize the activities of the DIO and to report on the current status of the investigation and follow-up of AFP cases. State EPI Officer will in turn report weekly to the national level. Reporting by the DIO and State EPI Officer should take place even when no cases of AFP have been identified (nil reporting). It is mandatory that all levels report weekly.
- v. **Active surveillance:** One of the most critical units in the reporting system is the hospital. Case finding through the emergency department, pediatric, and neurology wards, as well as through outpatient clinics, is critical to the success for any

surveillance system. The DIO should regularly visit these hospitals to ensure that all AFP cases are reported, encourage reporting from private practitioner (including traditional and faith healers), and to look for new as well as missed and previously unreported cases. Apart from this, all health workers, Anganwadi workers, and traditional birth attendants must be encouraged to report AFP cases immediately to the nearest primary health centre. The medical officer in the primary health centre must in turn immediately alert the DIO.

**Key for a successful surveillance programme:**

- The reporting system must cover key hospitals and clinics and have at least one reporting source for every geopolitical unit.
- The concept of reporting all AFP cases rather than only poliomyelitis cases must be emphasized.
- Weekly reporting of AFP is critical.
- The concept of zero-case reporting (nil reporting) of AFP must be built into the reporting system.
- The reporting system for AFP must be continuously monitored and revitalized.
- Immediate response to reports of AFP by the DIO or Surveillance Medical Officer (SMO) must occur for every suspected case within 48 hours.
- Cooperation from the private medical community is essential for all surveillance efforts.
- The public needs to be informed about the importance of and procedure for reporting AFP cases.
- Feedback to all participants of the surveillance system is essential.

Publicity campaigns for the public, including announcements, distribution of posters, TV ads, newspaper articles etc. should be carried out in order to increase the public's awareness of the polio eradication programme, the need to vaccinate, and where to report cases of acute flaccid paralysis.

**vi Outbreak response immunization (ORI):** it should begin as soon as one or more cases of AFP that fit the case definition are detected, that is, AFP is present and no immediate cause due to trauma can be identified. Door-to-door searches are an effective way to find additional cases, particularly in areas where patients are not likely to seek medical care. The cases should be plotted on a spot-map.

ORI should cover a minimum of 500 children less than 5 years old around the reported AFP case. However, in certain situations it may be better to cover all children <5 years old in the entire village in rural areas and the municipal ward in urban areas. Trivalent OPV is the vaccine of choice of ORI. There are virtually no contraindications to OPV. The house-to-house campaign approach is the most effective method for ORI. **Stool specimen collection as a part of the case investigation should be done before initiating ORI.** The contact made during the ORI should be used to inform the community about the importance of reporting AFP cases immediately.

Each case of paralytic poliomyelitis probably represents 100 to 1,000 infected persons. As a result, the spread of the virus is wider than the local area where the case resides. It should be emphasized that mass immunization programmes with OPV have been shown to interrupt wild poliovirus transmission quickly; thus, immunization activities should cover a wide geographic area, particularly if there is any doubt about the quality of surveillance and/or vaccine coverage data. Adjacent areas may have coverage levels similar to the affected village or city, or there may be frequent or large-scale population movements. If so, immunization campaigns may need to be conducted in those areas as well. Such immunization activities should be organized.

**vii Virus isolation and specimen collection procedures**

Experience has shown that for purposes of eradication of wild poliovirus, stool specimen culture is by far the best diagnostic test.



**Stool:** Virus usually can be found in the feces from 72 hours to upto 8 or more weeks after infection, with the highest probability during the first 2 weeks.

**Isolation of wild poliovirus from stool is the best way to confirm the diagnosis of paralytic poliomyelitis.**

Specimens must arrive at the laboratory in good condition with ice which has not melted completely during transport. If specimens arrive with no ice, then the criteria for transport of specimens will not have been met. If wild poliovirus is present in the stool, its identification will be impossible if temperature are not maintained in transport, requiring the maintenance of the cold chain. "Adequate specimens" can be defined as 2 specimens, at least 24 hours apart, collected within 14 days of paralysis onset; each of adequate volume (8-10 g) i.e. ideally thumb sized and arriving at a WHO accredited laboratory in good condition. Good condition means no desiccation, no leakage, adequate documentation and evidence that the cold chain was maintained.

**Each stool specimen should be accompanied by the Lab Request Form which must have the following information when sent to laboratory:**

- Date collected;
- EPID number and case identification data;
- City/town/village, district, state;
- To whom the report should be sent;
- Clinical information especially date of paralysis onset;
- Number of OPV doses received;
- Date of last OPV dose;
- Correct identification on the specimen container (EPID) number and specimen number) written with indelible ink (permanent marker pen).



Ideally, all specimens should be sent to the laboratory the day they are collected. The DIO should not wait more than 2 days before shipping specimens to the lab. While awaiting shipment, specimens should be stored below +8°C. One should not wait for the laboratory results to conduct ORI. A decision should be made on the spot, regardless of whether laboratory results are available.

### viii Specimen collection and Handling

Specimen	8 grams of faces (approximately one "thumb-sized")
Number	Two specimens, taken 24 to 48 hours apart.
When	Within 2 weeks of onset, no later than 8 weeks
Method	Voided faces, preferably at least 8 grams.
Temporary storage	Less than +8°C
Transportation	Less than +8°C
Label	EPID number and ID data (see lab request form)
Collection responsibility	DIO and SMO
Storage responsibility	DIO and SMO
Transportation responsibility	DIO, SEPIO and SMO
Responsibility for provision of specimen containers and specimen carriers	DIO, SEPIO and Laboratory

## 2.10 POLIO ERADICATION

The Government of India implemented the strategy of National Immunization Days, i.e. **Pulse Polio Immunization (PPI)** in 1995 to achieve polio eradication by the year 2000. A nationwide acute-flaccid paralysis (AFP) surveillance system was successfully initiated in October 1997 with the training and induction of 52 Surveillance Medical Officers (SMOs) which has now increased to 108. Surveillance data suggest that the number of polio cases declined to

4252 in 1998, from 28257 cases in 1987. The data further show that wild virus transmission remains widespread.

### ***2.10.1 Intensification of PPI***

We now know from experience that the PPI campaigns using only a booth-based approach have not been sufficient to interrupt wild poliovirus transmission in the difficult areas where it is most persistent. ***A recent Action Research on PPI non-acceptors by MOHFW/UNICEF showed clearly that 10-15% of eligible children were missed in earlier PPIs. An area in which wild poliovirus transmission has recently occurred is by definition an area of low immunization coverage.*** Further, areas with poor surveillance are often also the same areas with deficient immunization coverage.

To achieve the desired effect to meet the goal of complete eradication of wild polio virus requires the intensification of PPI.

### ***2.10.2 Intensification of PPIs will***

- Reduce the number and size of high-risk areas requiring special attention, freeing health officials to concentrate efforts and resources on progressively fewer and smaller areas,
- Boost the motivation of health officials at all levels by involving them in monitoring the progress towards interruption of virus transmission and letting them share the excitement of rapid progress toward this goal,

The intensification is also intended to overcome the reasons of low turnout of children in earlier Pulse Polio rounds. These reasons most common were:

- No one was available in the household to take target-age children to the vaccination post,
- Lack of interest or motivation to have children vaccinated,
- Fear or mistrust of vaccination,
- Young 0-6 month infants not brought to post,
- Migrant populations.

## Key Messages

- To eradicate Polio, all children under the age of five should receive all of these additional doses during IPPI.
- Vaccinate all children under the age of 5 years, irrespective of their previous immunization status.
- Giving additional doses of every PPI round is absolutely safe for the child and is essential for eradicating poliomyelitis.
- Vaccinate newborn and sick children also i.e. even children with mild fever, diarrhoea, respiratory infection etc. should be given the vaccine.
- Pulse Polio Immunization is not a substitute to routine immunization. Routine immunization must continue.

### ***2.10.4 The success of intensified PPI depends upon***

- Extra doses of OPV administered simultaneously, **as a pulse**, to **all** children of 0-59 months on the 4 fixed dates in the whole country is essential. The term "pulse" has been used to describe this sudden, simultaneous and mass administration of OPV on a single day to all children of 0-59 months of age.
- Pockets of high risk, or where routine immunization has been poor, must be effectively addressed to achieve the high level of coverage needed to interrupt transmission. Area-specific strategies and supervision for such areas are to be **firmed** up by the States on a special basis.
- **Intensification** will reach all children who did not come to the PPI post through the **house to house search and vaccinate** strategy. Intensified PPI will have both post-based and House to house components. The house to house component is a must!
- ***Use of gentian violet solution to identify immunized children.***
- ***Accurate mapping and meticulous micro-planning in the high-risk areas.***



### ***2.10.5 Overcome the shortcomings of earlier PPIs***

Recent data shows that 10 to 15% or more of targeted children in high-risk areas may be missed during the PPI campaigns that rely totally on a fixed post approach. Failure to reach and vaccinate 10-15% or more target age children in high-risk areas, especially if the same children are missed repeatedly, can contribute to a large pool of susceptible children to keep poliovirus in circulation. *This was painfully evident in the 1997 and 1998 Uttar Pradesh outbreaks.* In high-risk areas the missed children must be reached. All practical ways to accomplish this objective have to be utilised.

### ***2.10.6 What is a High Risk Area (HRA)?***

*A high-risk area is defined as:*

- A district or urban ward where a polio case has occurred during the last 12 months.
- An area with poor surveillance. This means districts with any of these factors:
  - No AFP case reported in the previous 12 months.
  - Non-polio AFP rate less than 1 for the previous 12 months.
  - Less than 80% AFP cases with 2 stool samples within 14 days of onset of paralyses.
- Urban slums.
- Populations with poor access to health care and routine immunization.
- Certain specific group not interested in vaccination.
- Area with civil unrest.
- Remote and sparse populations.
- People living in areas not formally recognized by civil authorities, unauthorized slums.
- Mobile population and tribes.



The size and boundary of a HRA is to be determined by surveillance data, and local epidemiological parameters.

### **Why should fully immunized children receive OPV during Intensified PPIs?**

Intensified PPIs replace, and thereby, eradicate the harmful "wild" poliovirus in the community. The guts of some fully immunized children may still harbor wild poliovirus. Therefore, all children 0-59 months of age must be reached if the disease causing wild poliovirus is going to be replaced by the protective OPV.

#### ***2.10.7 Reach pockets of under-served populations and high risk areas***

Reaching unimmunized, under-served populations is one of the 3 key elements of successful Intensified PPIs. The other two being political commitment and adequate surveillance.

*In urban areas, this will require:*

- Intensive supervision;
- Increased number of posts;
- House to House search and vaccination;
- Increased number of volunteers;
- Intensified social mobilization efforts tailored specifically to the under-served population.

In rural areas, reaching under-served populations may require:

- Additional booths/posts
- Increased numbers of volunteers
- Additional time and efforts
- Additional resources (human, financial and transport) for logistics.

#### ***2.10.8. Identify under served populations***

One of the important elements to successful Intensified PPI is reaching under-served populations frequently missed by routine immunizations. Among these, wild poliovirus continues to circulate.

The district committees must identify who and where these populations are. "Under-served populations" are usually high-risk (for polio) and/or hard-to-reach populations (for immunization) such as:

- Areas with polio cases.
- Populations living in areas of civil unrest.
- Pockets of unimmunized or underimmunized children in urban and peri-urban areas.
- Populations with poor access to health care.
- Urban slums.
- Religious group not interested in vaccination.
- Remote or sparse populations.

The size and boundaries of the area to be covered should be determined according to epidemiological parameters. No limits should be set.

## **2.11 NEONATAL TETANUS ELIMINATION**

1. The problem of neonatal tetanus is usually under-estimated as the children die within a few days of birth often without being brought for treatment. Unless there is active surveillance, deaths due to neonatal tetanus may not be recorded or reported.
2. Two doses of TT vaccine, at an interval of one month, to pregnant women are given to protect them and the newborn against tetanus. Immunization should not be delayed. The first dose is given at the first contact during pregnancy and the second after an interval of one month.
3. Tetanus occurs when tetanus spores come in contact with an open wound. The risks are high at the time of delivery if practices are unhygienic and the woman is unimmunized. The use of the **five clean practices greatly** reduce the risks of tetanus (maternal and neonatal) as well as puerperal sepsis. The newborns are at added risk if the umbilical cord is cut with an unclean instrument.

### FIVE CLEAN PRACTICES

- ◆ Clean surface for delivery.
- ◆ Clean hands of the attendant.
- ◆ New blade for cutting the cord.
- ◆ Clean tie for the cord.
- ◆ No applicant on the cord stump.

4. The clean practices are within the means of all families. If the pregnant woman knows and understands the importance of the practices for herself and her child, she can **INSIST AND ENSURE** that whoever assists her at the time of delivery, washes her hands thoroughly with soap and water, uses a new (unopened) blade for cutting the cords, use clean ties for the cord and does not apply anything on the cord stump. Funds have been allocated for the purchases of a simple disposable delivery kit (DDK) consisting of a new blade, two cord ties and two pieces of gauze and a piece of soap. The DDK should be given to the pregnant woman during antenatal clinic and she should be advised about clean delivery practices.
5. Occurrence of a case of neonatal tetanus means a failure of the system to provide TT immunization, ensure delivery practices by trained personnel and disseminate relevant information to the family and the community about clean delivery practices. If so status of the immunization programme and delivery practices in the area should be assessed with the highest priority. Besides improving immunization coverage levels, training of dais should be taken up in the area. In areas where the proportion of domiciliary deliveries by untrained personnel is still high, IEC activities should be stepped up and DDK supplied to the pregnant women.
6. Even a single case of neonatal tetanus should trigger follow-up action to prevent cases in the future. Areas from where cases of neonatal tetanus have been reported should be spot-mapped. The quality of programme interventions in these areas should be reviewed separately by the supervisory staff.



### **FOLLOW-UP ACTION TO BE TAKEN IN AN AREA WITH A CASE OF NNT**

- ◆ Improve TT immunization coverage.
- ◆ Arrange dai training programme.
- ◆ Supply disposable delivery kits.
- ◆ Intensify IEC activities.
- ◆ Improve surveillance.

7. All PHCs and districts should aim at zero cases of neonatal tetanus. The definition of neonatal tetanus (NNT) elimination is a rate of less than one case per 10,000 live births. Since the tetanus spores are widespread in the environment TT immunization and clean delivery practices must be continued indefinitely.

#### **2.11.1 *The strategies for neonatal tetanus elimination are***

- ❑ Increase and sustain high coverage levels with two doses or a booster dose of TT in pregnant women.
- ❑ Increase proportion of deliveries by trained personnel for domiciliary deliveries.
- ❑ Implement essential newborn care, including cord care, to reduce risks of neonatal tetanus.
- ❑ Strengthen surveillance system and undertaken follow-up action in areas from where cases are reported.
- ❑ Continue IEC activities in the community with special focus in areas from where cases have been reported and in areas where the proportion of deliveries by untrained personnel is high.

### **2.12 METHODS TO CONTROL OF MEASLES**

Measles is a serious disease and is associated with a large number of problems and a high mortality. It can be effectively prevented by the measles vaccine.



### **2.12.1 How is measles transmitted?**

Measles is due to a virus which is transmitted through air. Hence it spreads rapidly from a patient to others, within families, schools, in crowded areas, and especially in slums. It can occur in any area, particularly in areas with a dense population but it may also have seasonal peaks, such as the start of summer.

### **2.12.2 Measles vaccine**

The vaccine should be given to all children between the ages of 9-12 months, preferably as soon as the infant completes 9 months (270 days plus). It can also be given to any older child if not already protected.

It is a part of the National Immunization Programme. However, it is also useful to organize special mass immunization programmes in the community especially just before the onset of summer e.g. some time in March. Plan such camps once in every three months to supplement the routine immunization programme.

### **Key Messages**

- ***Do not withhold the vaccine in cases of minor illness such as coughs, cold or diarrhoeas and malnutrition.***
- At the time of giving the last dose of DPT and OPV in the 14 weeks, tell the mother to bring the infant to the centre for the measles vaccine when the child completes 9 months.
- Increase public awareness of the risk of the disease and the efficacy of the vaccine. Talk to area leaders, school teachers, etc. to help and motivate the public.
- Remember that although, some children (around 20%-30%) may develop reactions such as fever and rash 5-7 days after the injection, it is very mild and **complications are far greater with the natural disease**. Convey this message to the mother too.
- ***Every child deserves one injection of measles vaccine - give it.***

### **2.12.3 Control of measles**

1. All children are susceptible to measles infection unless protected by immunization. Measles has a wide range of clinical severity. In malnourished children, case fatality rates of post-measles complications are high if appropriated treatment is not started early after the onset of symptoms. Deaths due to measles are preventable by immunization between 9 to 12 months of age and by appropriate and early treatment of post-measles complications.
2. One dose of measles vaccine provides life-long immunity. Since the median age for measles infection is around 24 months of age, it is important that children receive measles vaccine at 9 months of age or as soon as possible thereafter and are immunized before they are exposed to the risk of infection.
3. As a result of the vaccination programme, the reported incidence of measles has declined substantially.
4. Measles immunization coverage levels, although relatively high, are not uniform, with wide variations between the states and the districts. Within districts, the unimmunized children are clustered in pockets of 'high-risk' such as urban slums, peri-urban areas and remote, difficult to approach rural areas. Some districts are yet to reach high coverage levels. These areas are at risk of measles outbreaks.
5. The treatment facilities and the health staff must immediately report any sudden increase in cases. Even a single case from far-flung, difficult to approach and tribal areas should be treated as an outbreak and necessary investigations and follow-up action must be initiated immediately to prevent deaths due to measles.
6. The common complications of measles are diarrhoea and pneumonia. Timely and appropriate management of cases of

diarrhoea and pneumonia will reduce case fatality rates and save many lives. It is important that community is made aware of the importance of increased fluid intake and continued feeding during episodes of diarrhoea and of the signs of pneumonia (increased respiratory rate and chest indrawing) for seeking immediate medical help. Health educational activities must be started before an outbreak has occurred. Precautionary measures taken in anticipation of outbreaks in high-risk pockets will help to minimize measles mortality rates.

7. Measles leads to malnutrition in children and depletes vitamin A reserves. The control of measles will have a positive impact on the nutritional status. It will also reduce the episodes of diarrhoea and pneumonia in your children.
8. Encephalitis can occur between the second and sixth day after the onset of rash. Encephalopathy can also develop in children with severe post-measles pneumonia due to acute circulatory disturbance and hypoxemia. Although, reliable data in the country is not available, according to some reports a CNS complication rate of 50 to 400 per 100,000 cases of measles can be expected.

#### ***2.12.4 The strategies for measles control are***

- ❑ Increase and sustain high levels of immunization coverage in children between 9 to 12 months of age with one dose of measles vaccine.
- ❑ Identify high-risk pockets and intensify immunization coverage in these pockets on priority to prevent outbreaks of measles.
- ❑ Strengthen surveillance system for vaccine preventable diseases, including measles for identification of high-risk pockets, early identification of outbreaks and to document impact of services.
- ❑ Ensure timely and appropriate treatment of complications following measles to prevent deaths.



- ❑ Continue IEC activities to prompt measles immunization at the right age and to create awareness about what families should do if a child has diarrhoea or pneumonia following an episode of measles.

## **MESSAGES TO MOTHERS**

- Protect your children with all the immunizations of the National Immunization Programme.
- There are very few reactions with vaccines and they are always far less serious than the complications of the diseases that they prevent.
- Take children below 5 years twice a year to your local centre for the pulse polio immunization in December and January.
- Pulse polio immunization is in addition to the routine immunization programme, not a substitute for it.

### **2.13 ADVERSE REACTIONS FOLLOWING IMMUNIZATION**

Adverse events should be reported and investigated immediately. Serious adverse events including death following immunization must be reported within 24 hours. Other children vaccinated in the session should be examined to check for reactions and to provide treatment, if required. Cluster of cases (more than one case) is expected if the reaction was due to a programmatic error. Clustering of cases can also occur if the cause of the symptoms was due to incidental causes such as an infection. Other non-immunized children of the same age-group in the neighbourhood of the affected child should also be examined to rule out temporal relationship between reported adverse effect and immunization.

1. The vaccines used under the immunization programme are safe and effective. This is documented by the experience of using nearly 650 million doses of these vaccines annually in the country for a decade and similar experience worldwide. However, just as no vaccine is 100% effective, none is entirely without risk and severe adverse events following immunization



can occur but these are extremely rare and **may be coincidental**.

2. Among the recorded and documented severe events following immunization which can lead to death or severe life-long sequelae and other reactions along with remedial measures given in Table III

**Table III**

### 2.13.1 ADVERSE REACTIONS FOLLOWING IMMUNIZATION

S.No.	Adverse Event	Vaccine	Symptoms	Management
(1)	Anaphylaxis  Extremely rare	Any vaccine	Within minutes <ul style="list-style-type: none"> <li>▪ Acute decompensation of circulatory system.</li> <li>▪ Hypovolemic shock</li> <li>▪ Altered sensorial</li> <li>▪ Laryngo spasm/oedema</li> <li>▪ Acute respiratory distress</li> </ul>	<ul style="list-style-type: none"> <li>▪ Adrenaline (1:10,000)</li> <li>▪ Dose : 0.01 ml/kg body wt. SC/IM give immediately</li> <li>▪ Cardiopulmonary resuscitation</li> <li>▪ IV volume expanders</li> <li>▪ Oxygen inhalation</li> <li>▪ Hydrocortisone injection IV</li> </ul>
(2)	Hypotensive – hyporesponsive episode  Very rare	DPT	Within 12 hours <ul style="list-style-type: none"> <li>▪ Acute paleness</li> <li>▪ Transient decreased level or loss of consciousness decrease or loss of muscle tone</li> </ul>	<ul style="list-style-type: none"> <li>▪ IV fluids</li> <li>▪ Dexamethasone</li> <li>▪ Oxygen</li> </ul>

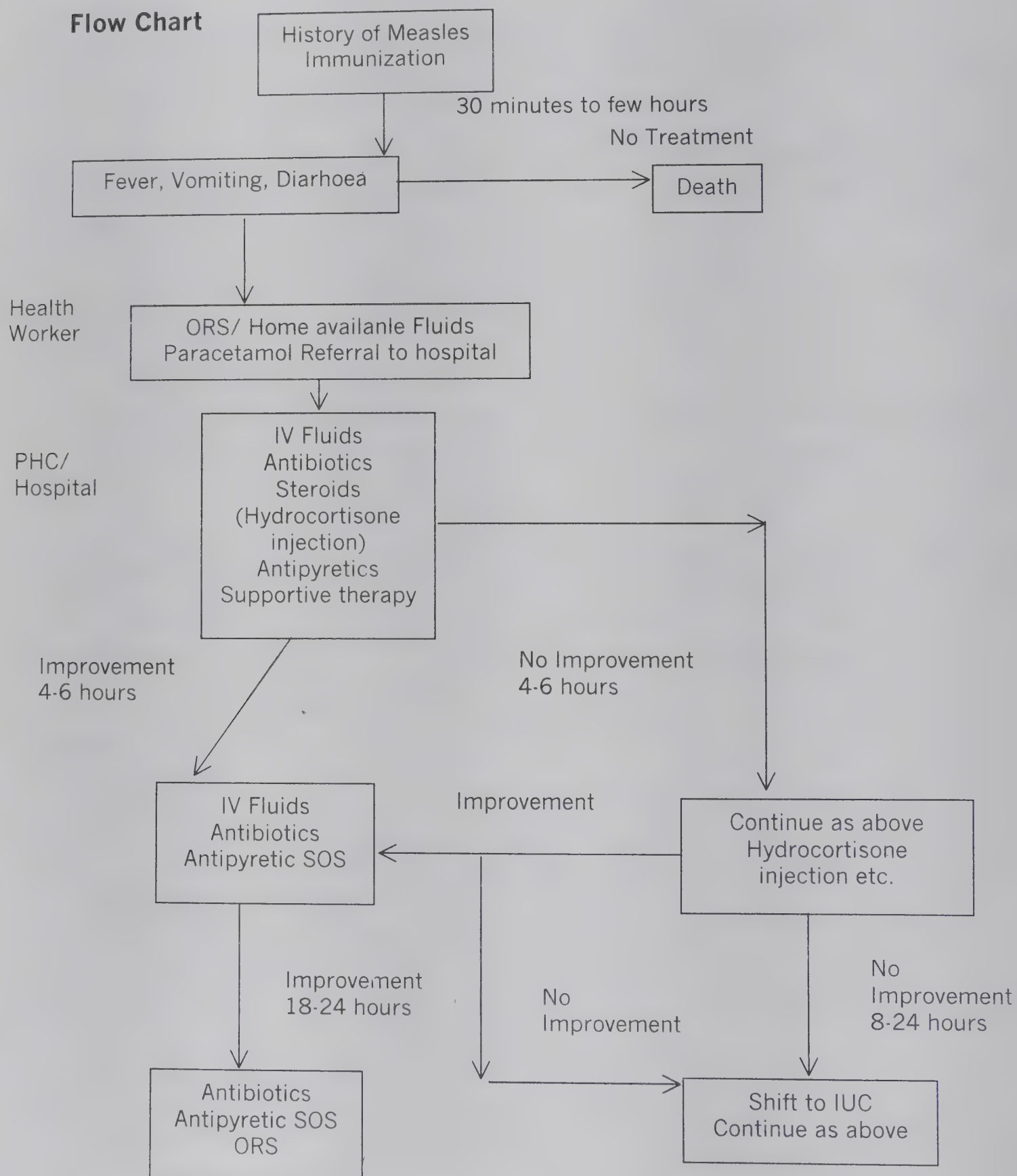
S.No.	Adverse Event	Vaccine	Symptoms	Management
(3)	Incessant cry	DPT	<ul style="list-style-type: none"> <li>Within 48 to 72 hours after DPT immunization.</li> <li>Excessive inconsolable crying</li> </ul>	<ul style="list-style-type: none"> <li>Sedation of little help</li> <li>Analgesic e.g. Paracetamol orally.</li> <li>Feeding advice</li> <li>Avoid DPT for subsequent dose/s and give "DT".</li> </ul>
(4)	Toxic shock syndrome  May be due to contamination of vaccine	Contamination of Measles vaccine by Staph aureus	Within 30 minutes to few hours <ul style="list-style-type: none"> <li>Mounting fever</li> <li>Vomiting</li> <li>Diarrhoea</li> <li>Septic shock</li> </ul>	Detail flow chart given in page 50 <ul style="list-style-type: none"> <li>IV fluids</li> <li>Antimicrobials</li> <li>Steroids</li> <li>Antipyretics i.e. Paracetamol orally.</li> <li>Supportive therapy</li> </ul>
(5)	Lymphadenitis  Local ulcer	BCG	Within 2 to 6 months <ul style="list-style-type: none"> <li>Firm to soft axillary lymphadenitis 1.5 to 3 cms size with or without sinus</li> <li>Ulcer at the site of injection</li> </ul>	<ul style="list-style-type: none"> <li>If firm no treatment.</li> <li>If soft and fluctuant aspiration if needed</li> <li>If sinus present and persists beyond 12 weeks</li> <li>Give INH 5 mgm/kg once daily for 3 months</li> </ul>
(6)	Bacterial abscess or Sciatic nerve injury  May be contamination of vaccine or	Any vaccine	Within 72 hours fluctuant or firm abscess with or without fever	<ul style="list-style-type: none"> <li>Antibiotic</li> <li>Antipyretics</li> <li>Drainage (if needed)</li> </ul>

S.No.	Adverse Event	Vaccine	Symptoms	Management
	lack of sterilization			
(7)	Sterile abscess	DPT, DT, TT, Typhoid and HB	By 72 hours <ul style="list-style-type: none"> <li>Minimum inflammation</li> <li>No fever</li> </ul>	<ul style="list-style-type: none"> <li>Drainage if needed</li> </ul>
(8)	Moderate local reaction	Any vaccine	Non fluctuant swelling/redness approx., 3cms to 10 cms in size at the injection site	<ul style="list-style-type: none"> <li>Paracetamol (500 mgm tablet)</li> <li>Dose : Less 3 months age 1/8<sup>th</sup> tablet</li> <li>3 months to 3 years 1/4<sup>th</sup> tablet</li> <li>3 years to 5 years 1/2 tablet.</li> </ul>
(9)	Severe local reaction	Any vaccine	Non fluctuant swelling/redness 10 cms size or larger at the site of injection	<ul style="list-style-type: none"> <li>Paracetamol</li> <li>Dose as above</li> </ul>
(10)	Seizure/s with / without fever (rare) or convulsions.	DPT Measles Ruled out other causes of convulsions	By 24-48 hours Always generalised simple or complex	<ul style="list-style-type: none"> <li>Anticonvulsants e.g Injection Diazepam</li> <li>Dose : 0.3 mgm/kg /dose</li> <li>Slow IV</li> <li>Can be repeated after 30 minutes</li> <li>Antipyretics</li> <li>IV fluids if need be</li> </ul>
(11)	Hyperpyrexia	DPT and Measles	By 12-24 hours	<ul style="list-style-type: none"> <li>Antipyretics</li> <li>Tepid water sponging.</li> </ul>

## 2.13.2

## Management of TSS

### Flow Chart





### **2.13.3 Measures to minimize risks**

The following measures will help to minimize risks of adverse events following vaccination.

- Procedure for sterilization of syringes and needles should be scrupulously followed and monitored. Wherever feasible autoclaving, steam sterilization should be done, or boiling.
- A single, sterile syringe and a single sterile needle should be used for every injection.
- Measles vaccine should be used within 4 hours of reconstitution.
- Diluent for measles vaccine should be kept separate from other potentially harmful injectable drugs.
- Training programmes for all categories of personnel should receive the highest priority to ensure high quality of services.
- Reporting adverse reactions in their areas should be made compulsory.
- Field monitoring of services should be regular and deficiencies should be noted and corrected in a timely manner.

### **Reporting**

All the adverse reactions are to be reported.

Immunization card, which includes items like antenatal care, iron, folic acid and Vit. A will remain the major tool for communication and informations to the family. The counter foil will be kept by the health workers.

### **SOCIAL MOBILIZATION**

- To make your immunization programme successful you need cooperation of people. So you have to mobilize community.
- For this you have to identify persons from community who can help you, such as: Village leaders, Political leaders, School teachers, Anganwadi workers, Religious leaders, Traditional birth attendants, youth organization, Mahila Swasthya Samiti etc.

- Explain them about the vaccine preventable diseases, their magnitude in the area and the problems caused to the infants and children in community. These problems are preventable by simple immunization.
- You tell people the amount of expenses required to treat such diseases, and may be fatal. But they are prevented by immunization, which costs them nothing.
- The community should demand the immunization for the benefit of their children's health which is their responsibility. Not that you want to give them.

**Active community participation is essential for successful coverage**

## **UNIT - 3**

### ***NUTRITION***

#### **INFANT FEEDING**

##### **STRUCTURE**

- 3.1 Introduction
- 3.2 Exclusive breast-feeding
- 3.3 Advantages of breast-feeding
- 3.4 Support to the mother for initiation and sustaining of breast-feeding
- 3.5 Identification, prevention and management of common problems in breast-feeding
- 3.6 Appropriate complementary feeding practices and introduction of semisolid food in right age
- 3.7 Nutritional deficiency states (Protein, energy and micro-nutrient deficiencies)

##### **LEARNING OBJECTIVES**

*At the end of this unit, you should be able to:*

- Understand why breast-feeding is important and the importance of colostrum.
- Provide support to mother to initiate and continue breast-feeding.
- Identify and manage common problems associated with breast-feeding.
- Explain the importance of breast-feeding in LBW babies.

- Understand what is complementary feeding and the need for it.
- Assess the nutritional deficiency states (Protein, energy and micro-nutrient deficiencies).

### **3.1 INTRODUCTION**

Breast-feeding is a fundamental right of every baby which is very important for the growth and development of children as well as important for the health of the mother. It has been recognized, the need for the promotion of exclusive breast-feeding in the first 4-6 months of age and sustain breast-feeding in addition to adequate complementary food after 4-6 months up-to 3 years of age or even beyond to reduce the morbidity and mortality among infants.

You are working for mother and child, have to play a key role to sustain breast-feeding, and train your nurses and other health workers adequately in skills needed to support and maintain breast-feeding.

### **3.2 EXCLUSIVE BREAST-FEEDING**

#### ***3.2.1 What is exclusive breast-feeding***

The exclusive breast-feeding means that except for breast milk no other food or fluid including water and prelacteal feeds should be given to a child after birth to 4-6 months of age.

### **3.3 ADVANTAGES OF BREAST-FEEDINGS**

- ▶ Very convenient method of feeding.
- ▶ It contains exactly the nutrients that a baby needs.
- ▶ Easily digestible and assimilable.
- ▶ It protects the baby from infection.
- ▶ It is economical.
- ▶ It is a natural way to promote mother-baby bonding.
- ▶ It prevents allergic reaction and subsequent development of coronary heart disease.
- ▶ It helps baby's development – physical and intellectual.



- ▶ It protects mother's health as well i.e. helps early uterus involution to normal size, reduces post partum bleeding, so prevents anaemia, reduces the risk of ovarian cancer and breast cancer.
- ▶ Exclusive breast-feeding helps to delay the birth of a subsequent child.
- ▶ Breast-fed babies are free from dental caries.
- ▶ ***Prevents malnutrition.***
- ▶ ***Even twin can be fed as mother has enough milk.***

### 3.4 INITIATION OF BREAST-FEEDING

- Newborn baby needs nothing except breast milk – **No pre-lacteal feeding is required.**
- Mother to be convinced the dangers of prelacteal feeds and in addition the special features of colostrum.
- Early commencement of breast-feeding and frequent suckling on demand will promote milk formation and prevent breast engorgement.
- Initiate breast-feeding as early as possible preferably within half an hour of delivery.
- Giving colostrum has also been called the "first immunization" of the child.
- After caesarean section breast-feeding should be started as soon as possible, of course after the recovery from anaesthesia.
- Mother should be assisted to put the baby on the breast when mother is lying supine/to her sides whichever she feels more comfortable.

**First feed colostrum, don't destroy it.**

#### 3.4.1 *Position of mother and baby during feeding*

- Mother may adopt any position that she feels comfortable/traditionally accepted.
- Proper positioning of the baby is very important for successful feeding and prevention of pain during feeding and sore nipple.
- The baby's head and body should be in a straight line.

- His face should face the breast, nose opposite the nipple.
- Mother should hold the baby close to her.
- In newborn baby she should support his bottom and not just his head and shoulder.
- Touch the nipple to the corner of the mouth of the baby then baby turns towards the breast due to “rooting reflex”.
- When the baby opens his/her mouth, mother should introduce the nipple and as much as possible the areola.
- The infant draws the nipple and areola making it into a long ‘teat’ and pressing it against the palate while his tongue strips out the milk.

**Sucking on just the anatomical nipple is painful, and sufficient milk will not come out.**

### ***3.4.2 Frequency and duration of feeding***

- Develop confidence.
- Encourage breast-feeding on demand, known by crying of the baby. Because by this, breast milk comes sooner, baby gains weight, no breast engorgement occurs and it gives excellent mother-baby bondage.
- Baby should suckle as long as he/she wants.
- Let the baby finish feeding on the first breast to get the fat rich hind milk. Then offer the 2<sup>nd</sup> breast which she may or may not want.

If the baby does not want the second breast, so next time the mother should start feeding from that side. So that both the breasts will get same amount of stimulation and will prevent breast engorgement as well.

**Encourage breast-feeding day and night.  
Breast milk contains enough water sufficient even in summer.**

### ***3.4.3 Stool frequency and consistency in breast-fed babies***

- At birth baby passes dark sticky stools called meconium.
- 3<sup>rd</sup> and 5<sup>th</sup> day colour changes to green-golden yellow and stool is more loose with separate water and curdy portions.
- May pass a small amount of watery material while passing wind during and immediately after feeding.
- Mother may report that baby passes stools 15 to 20 times a day or in contrast, breast-fed baby evacuates the bowel once in every 2<sup>nd</sup> or 3<sup>rd</sup> day, but stool is soft in consistency.

***Those are normal variation requiring no treatment:***

<b>Exclusive breast-fed baby in general do not develop diarrhoea.</b>
---

### ***3.4.4 Role of medical officer***

- There are lots of misconceptions of the mothers in our country about the quality and quantity of breast milk, which lead to sudden discontinuation of breast-feeding and introduction of top feeding. **So it is your duty** to advise and convince mothers about the benefits of breast-feeding.
- Mother is to be convinced that she has enough milk for the growth of baby and lactation failure is very rare.
- Mother to be advised to give nipple along with sufficient i.e. 2/3 of areola into the mouth of the baby. **Baby should not suck from only the nipple** which is not only painful to the mother but also makes sore nipple.
- You must advise her for correct positioning during feeding.
- Contact during the ante-natal check-up and immunization period with the mother, is the best opportunity to explain her (mother) about the benefits of breast-feeding to her and her baby.
- Bottle-feeding should be strongly discouraged.



### 3.5 IDENTIFICATION, PREVENTION AND MANAGEMENT OF COMMON PROBLEMS

#### 3.5.1 Flat or retracted nipples

If one touches the nipple between two fingers it erects and called protactility. A protractile nipple is normal. There are some nipples which look flat protractile. So advise the mother as follows.

- Develop the mother's confidence first.
- Encourage the mother to have skin to skin contact with the baby.
- Detect the problem early and manage it preferably in the ante-natal period/soon after birth so that intervention can be done before the breast becomes heavy with milk. At that time sucking will be very painful.
- Effective method is to use the 10 ml plastic syringe as follows:

**3.5.1.1** Take a 10 ml plastic syringe. Cut the syringe about 0.5 cm proximal to the nozzle after removing the piston Fig. 3.

Introduce the piston through the cut end of the syringe i.e. opposite the usual end and push it up to the flange. The smooth flange is then placed over the nipple and then draw the piston and nipple will be pulled out. Do this manually slowly. This manouver can be done by the mother herself after demonstrating her. Once the nipple is protracted out the baby can easily breast-feed.

#### **TREATMENT OF INVERTED NIPPLE (USING SYRINGE METHOD)**

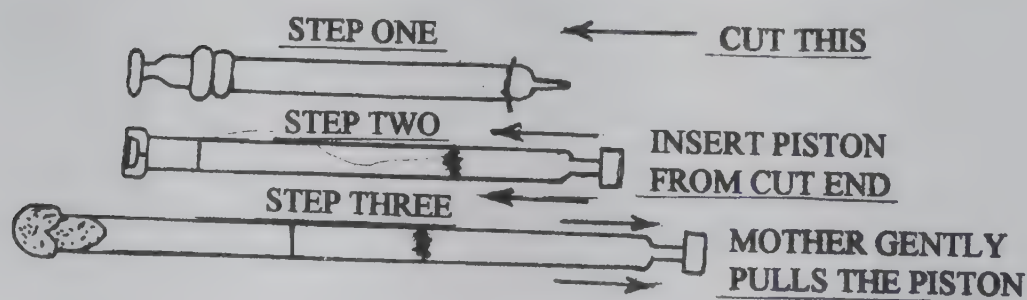


Fig. 3



### **3.5.2 Sore nipple**

If baby continues to suckle in poor position may damage the skin of the nipple and the mother will have very painful experience. The nipples develop fissure or cracks. So advise as follows:

- It occurs due to the poor attachment.
- Develop mother's confidence.
- Ointments are not recommended and are harmful.
- Once the mother is taught correct method of feeding, she acknowledges the marked reduction in or even total disappearance of the pain in the nipple during sucking.
- If infant goes to sleep during feeding, the nipple should not be pulled out forcibly but gently eased out by depressing infant's lower jaw.
- Blood discharge is not a contra-indication of feeding.
- The simple method is to prevent the nipple sore by correct positioning of the baby.

### **3.5.3 Engorged breast, mastitis and breast abscess**

When breast are not adequately emptied, they become engorged. If care is not taken for engorged breasts then they may be infected and appear red, swollen and tender to touch, called mastitis. Untreated mastitis may develop an abscess.

<i>Causes</i>	:	*	Due to delay in starting breast-feeding.
		*	Poor attachment.
<i>Treatment</i>	:	*	Build mother's confidence.
		*	Milk may be expressed out manually/breast pump.
		*	If engorgement is excessive, hot and cold compression may relieve the pain.
		*	If develops mastitis/breast abscess, administer proper antibiotics, analgesic (to reduce pain) and lastly drain abscess.

### **3.5.3.1 Prevention of engorgement**

The problem like mastitis and breast abscess are due to engorgement of breast.

- \* Ensure confidence of mother.
- \* Start feeding the baby soon after delivery.
- \* Make sure that the baby is well attached to the breast.
- \* Encourage unrestricted breast-feeding.

**Unrestricted breast-feeding prevents mastitis and breast abscess.**

### **3.5.4 Refusal of the breast**

- \* Usually baby refuses breast if he/she has been given bottle earlier/after illness.
- \* It is not clear whether it is due to nipple confusion, discomfort or temper tantrum.
- \* However calm attitude is essential on the part of parents, relatives and health personnel.
- \* Baby to be soothed by placing him/her on the shoulder and calmed down gently.
- \* Try to feed the baby when baby is calm. After a few attempts mother may be successful.
- \* Don't try to squeeze breast milk in to the baby's mouth while he/she is crying, which may carry the risk of aspiration.

### **3.5.5 Adequacy of breast milk**

Very often mother complains, breast have not sufficient milk to feed the baby, so you should console and convince her that a breast-fed infant is consuming sufficient milk can be known by the following observations:

- \* Gaining weight checked at periodic intervals.
- \* Urinates about six times a day.
- \* Feeding and sleeping well.

### **3.5.6 Duration of breast-feeding**

- \* Exclusive breast-feeding until 4-6 months. Baby's growth and development continues at a rapid pace during first year of life and baby's activity also increases by this time.
- \* In order to maintain the optimum rate of growth and development, the baby at this stage needs foods in addition to mother's milk.
- \* Breast-feeding can be continued for as long as desired in addition to the complementary foods, preferably until the baby is at least one to two years old.
- \* It has been said that prolonged breast-feeding is the cause of malnutrition, but it is not true. It is not the breast milk per se, but is primarily a reflector of inadequate quantity and quality in the supplementary foods.
- \* When a mother decides to stop breast-feeding it should be done slowly over a period of time. The child should be comforted and should feel loved in other ways.
- \* Medically breast-feeding is quite safe to continue when mother is pregnant, of course there are many taboos and cultural beliefs against it.

### **3.5.7 Normal weight gain**

It is important to monitor the weight gain to know that the baby is getting adequate nutrition.

- ◆ Normally a newborn loses weight in the beginning which is regained by the 10<sup>th</sup> day.
- ◆ The expected average weight gain by the baby is as follows:

First three months	200 gms per week.
The next three months	150 gms per week.

**Baby doubles birth weight by 5-6 months and triples it by one year of age.**



- ◆ Weight increases by 2.5 kgs per year between 1-2 years and 2 kgs per year between 3 to 5 years.

### ***3.5.8 Breast feeding and HIV***

- \* Breast-feeding should continue to be promoted, supported and protected even with human immunodeficiency virus (HIV) infection.
- \* Breast milk may also be important in preventing intercellular infection, which could accelerate progression of HIV related disease in already infected infants.

## **3.6 COMPLEMENTARY FEEDING (ADDITION OF SEMI-SOLID FEEDING FOR YOUNG INFANTS)**

Complementary feeding means introduction of semi-solid feeding for your infants at the age of 4-6 months in addition to usual breast-feeding not merely change for one milk to another milk.

The ideal time to start introducing semi-solid feeds to babies is about 4-6 months of age, because:

- \* The baby needs food and water in addition to breast milk, to continue to thrive, grow and develop well at a rapid pace during the 1st year of life.
- \* During this time (4months to 6months) baby's activity increases.
- \* Baby's stomach is ready to digest food other than breast milk.
- \* The baby has a good appetite and accepts food readily.
- \* After the age of 6 months of the baby, many mothers do not have enough milk to form the sole source of nutrition for the infant.

### ***3.6.1 Start semi-solid foods when the baby is 4 to 6 months old***

Exclusive breast-feeding for 4-6 months, after which introduction of semi-solid (complementary feeding) is essential as breast alone cannot provide all nutritional needs alone. If



complementary feeding is not introduced at this age, the baby will not gain weight.

Six months to 2 years age is very crucial for the healthy growth and development of a child. If children are not given right type of food in adequate quantity will develop malnutrition, very often it occurs due to lack of information to mothers.

*How to start introducing foods:*

- \* Start with one item of food at a time.
- \* Start with semi-solids.
- \* Start with small quantity one teaspoonful and gradually increase.
- \* Initially give food in between feeds.
- \* Use spoon/Katori/Paladai.
- \* **Never use bottle as risk of infections is high.**
- \* Give feeds 2-3 time a day at 5-6 months, 3-4 time a day at 7-9 months, 4-5 time a day at 10-11 months and 5-6 time a day at one year and continue breast milk.

### ***3.6.2 What foods to give to infants***

- \* The semi-solid food should have a high caloric value. It should be easily digested, accepted taste, inexpensive, easy to prepare and have a low viscosity for easy swallowing.
- \* Foods like mashed ripe banana are often liked by babies, later porridge (made from milk, sugar, cereals i.e. rice, ragi, suji and wheat).

### ***3.6.3 Practical aspects of semi-solid feeding***

- \* Commence semi-solids when baby is 4-6 months of age.
- \* Continue breast-feeding as long as possible.
- \* Teeth are not required for eating semi-solid food.
- \* Give as much as the baby wants at a time.
- \* Feed young children solids 3-5 times a day.
- \* Give easily available home-cooked foods .

- \* Feeding during illness should be continued.
- \* Give semi-solid food, **not just soups, juices and dal ka pani.**
- \* Use minimum water for cooking and mash the food.
- \* Wash hands before cooking and giving foods.
- \* Keep foods covered.
- \* Keep garbage covered/dispose properly.
- \* A mixed balanced diet is ideal for the family and includes the staple cereal, pulses, green leafy and other seasonal vegetables and economical clean fruits, oils and milk, and where acceptable and feasible add meat, eggs and fish.

### ***3.6.4 Age related guidelines for giving complementary feeding***

The first foods given to baby in addition to breast milk are called complementary foods.

Complementary foods should be started if the baby is not gaining weight or appear hungry after breast-feeds.

#### 6-12 months

- \* Mash all food.
- \* Give semi-solid food: do not over-dilute.
- \* Start with one or two teaspoons.
- \* Amount of food is gradually increased.
- \* Variety of food is increased.
- \* More varieties of household foods can be added.
- \* Can eat almost everything cooked at home with oil or butter. (Softened and without spices).
- \* Never use feeding bottle.

#### 12-24 months

- \* Needs about 1000 calories or roughly half the amount that the mother eats.
- \* May continue breast-feeding.
- \* Food should not be spicy.
- \* Offer food at least five times a day.

## 2 years and older

- \* Family food should be given three times a day.
- \* Give also extra food if child wants.

### **3.7 NUTRITIONAL DEFICIENCY STATES: (PROTEIN, ENERGY AND MICRO-NUTRIENTS DEFICIENCIES)**

#### **INTRODUCTION**

In developing countries under-nutrition is the commonest problem, which is caused by deficiency of calorie and protein e.g. Kwashiorkor/Marasmus and micro-nutrients.

The importance of the association of nutrition and health has been well known since ancient times. Good nutrition forms the foundation of health in particular for growth, development, survival and maintenance of health throughout life. **The crucial period of health and development is directly proportional to its proper nutrition while in the mother's womb.**

The nutritional status of the population can be considered a good yardstick of the development of the country. Improvement in the nutritional status is vital, as under-nutrition is the underlying cause of almost half of the child deaths (0-5 years of age).

**We do not want our children just to survive, but to have a better quality of life**

- Majority of cases (PEM) i.e. 60-70 per cent is mild to moderate degree.
- 2.5 per cent of pre-schoolers suffer from severe malnutrition.
- The most common age of occurrence of PEM is 6 months to 2 years, around 50-60 per cent of children are malnourished by the age of 2 years. (National Family Health Survey)

### **3.7.1 Growth monitoring**

#### **What is Growth Monitoring?**

You may need to assess the nutritional status of the child as per age when child is brought by parents/HWs/AWWs by using road to health chart.

### **3.7.2 Growth monitoring is an operational strategy for the**

- i. Promotion of health, which enables mothers to visualise growth or the lack of it in their children.
- ii. To obtain specific, relevant and practical guidance to assure continued regular growth and health in their children.

### **3.7.3 The broad objectives of growth monitoring**

- To detect early growth faltering.
- To promote satisfactory growth through effective nutrition and health education.
- To create awareness about growth, amongst mothers of children.
- To enhance the delivery of primary health care intervention.
- To identify those 'at risk' for malnutrition and to provide appropriate services to them.

### **3.7.4 Why growth monitoring?**

- Identifying children with a high morbidity/mortality risk.
- Identifying parts of the community or the country for special health attention.
- Maximizing scarce resources for those most in need.
- Assists in evaluating the impact of other health intervention activities on the beneficiaries.



### **3.7.5 Indicators of growth**

- The growth status of a child is a useful indicator of its nutritional status.
- Weight is affected within a short duration of inadequate nutrient in-take and ill health.
- Height, head and chest circumferences do not change so rapidly nor can these later decrease in acute nutritional deficiency.
- Weight is considered as 'sensitive indicator' of nutritional status, responsive to acute nutritional deficiency of short duration.
- Height deficit may be considered to be indicative of chronic nutritional deprivation.
- Thus weight and height measurements together are useful to distinguish between current (acute) malnutrition and long-term or chronic malnutrition.

### **3.7.6 What is a 'Road to Health' Chart? How can we utilise the same?**

- A 'Road to Health' chart is a special card, devised to maintain the growth status of a child over a period of time.
- X-axis reports the age and Y-axis the weight of the child.
- There are four curved lines drawn on it, given below:
  - i. Upper most line represents the 50<sup>th</sup> percentile of the Harvard Standard.
  - ii. The second line represents 80 per cent of the same mean value.
  - iii. The shaded zone, enclosed in between these two lines represents the healthy zone and hence the name 'Road to Health' Chart.
  - iv. The third and fourth line represents 70 per cent and 60 per cent of the mean weight respectively. These are useful for grading the malnutrition of the child.

In a community setting, it helps to screen children (less than 60 per cent) of the expected body weight who need nutritional supplementation.

- [illegible]

610

### 3.7.7 'At Risk' child

It has been seen that a baby gained less than 0.5 kg in any month of the first 3 months or 0.25 kg in any of the 3 months of the second trimester is likely to be poorly nourished later, particularly if this poor weight gain was repeated in a succeeding manner.

Such children appear perfectly normal and overlooked unless weighing is carried out regularly and the weight plotted as shown in graph, at the same time, the staff need to be well trained to observe this poor weight gain (graph below). It is very important to identify earlier in order to take remedial measures to increase food intake which is much more easy and effective than to wait till the first sign of growth failure appears clinically as kwashiorkor or marasmus.

**Poor weight gain in first year of life to be taken seriously,** because during this time brain growth occurs which forms more new cells than at any other time. If growth is seriously retarded in this period, it may **result in impairment of intellectual development.**

Poor weight gain needs to be sought out carefully in 1<sup>st</sup> 3 months of life which happens because of little breast milk. The desired weight can be achieved by early introduction of complementary feeding to prevent illness and gross nutritional deficiencies in the later parts of 1<sup>st</sup> and 2<sup>nd</sup> year of life.

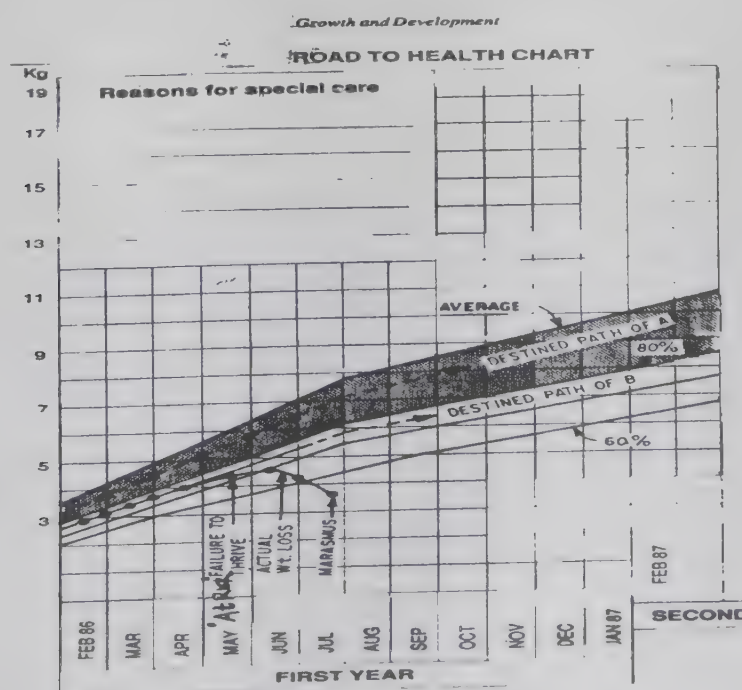


Fig. 5



## Causes

Lack of access of food is not only the cause of malnutrition but poor food practices and infection or combination of the two are the major factors.

- No breast-feeding/inadequate breast-feeding and/or use of diluted milk.
- Delayed introduction of complementary feeding and use of diluted milk.
- Providing wrong food and in-sufficient quantities.
- Late introduction of semi-solid food.
- Misconception, Ignorance and poverty.
- Infections e.g. measles, diarrhoea.
- Psychological trauma (separation from mother, birth of new siblings).

### **3.7.8 Identification of malnutrition**

- By weight per age : Use road to health chart.
- Clinical features of: Presence of gross wasting of subcutaneous, fat and muscles in marasmus and generalized oedema with skin and hair changes in kwashiorkor.

### **3.7.9 Management of PEM**

Mild to moderate malnutrition (PEM) can be managed at home. Even majority of severe degree of malnutrition can be managed at home, but cases having the following problems **must be hospitalised** i.e., hypothermia, hypoglycemia, dehydration and electrolyte imbalance, infections, convulsion, xerophthalmia, bleeding tendencies, severe anaemia, cardiac failure. If facilities are available in your PHC treat them otherwise refer to FRU for better management after stabilizing the cases.



## **(i) Management at Home**

Mild to moderate and some severe form of malnutrition (PEM) who have good appetite, normal body temperature, active, conscious and no evidence of serious infection can be managed at home under the direct supervision of medical personnel or attending hospital OPD.

## **(ii) Principles of Management**

- Educate mother about the cause of the disease
- Improve diet :  
Protein and calorie both modify child's diet, small calorie dense food.  
Give frequently (5-6 times a day ). Do not recourse to expensive food.
- Give Vit. A, iron and folic acid.
- Treat and prevent infection and infestations.

### ***3.7.10 Micro-nutrients supplements***

- Vitamin and mineral supplementation are important because the diet may not be adequate source or infection increases body's need e.g. Vit. A and iron.

#### **3.7.10.1 VITAMIN A DEFICIENCY**

### **(i) Introduction**

Vitamin A deficiency is recognized as one of the most important micronutrient deficiencies of public health significance, leading to irreversible blindness in young children. It is mostly vitamin A deficiency, which is associated with under-nourished children in developing countries. Its supplementation prevents nutritional blindness.

- Prevalence of vitamin A deficiency is maximum between the age of 6 months to 3 years.

- 50-80 per cent of children suffering from severe protein malnutrition having Vit. A deficiency.
- Aim should be to eliminate blindness and other consequences of vitamin A deficiency and 100 per cent coverage of children 9 months to 3 years with five doses of vitamin A.

**(ii) Sources :**

- Vegetable and fruits: Spinach, Mango and Papaya.
- Animal products: Milk, butter, and cheese, egg yolk, liver and animal fats, fish liver oil.

**(iii) Signs of Vit. A deficiencies:**

- Night blindness: A child cannot see around after darkness or in a dark room.
- Xerophthalmia: Is the drying of conjunctiva and cornea followed by destruction of the cornea (**keratomalacia**) perforation of cornea and subsequently blindness.
- Bitot's spots: The accumulation of foamy cheesy material on the conjunctiva often associated with xerophthalmia and night blindness.
- Skin becomes dry and scaly and occasionally follicular hyperkeratosis may be found on the shoulders, buttocks and extensor surfaces of extremities (toad's skin).

<p><b>Vit. A deficiency may lead to blindness.</b></p>
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**(iv) Prevention of Vit. A deficiency:**

**Schedule of mega doses of vit. A**

Dose no.	Age	Dose
1.	9 months	100,000 I.U. with measles vaccination.
2.	15-18 months	200,000 I.U. with OPV and DPT booster
3.	24 months	200,000 I.U.
4.	30 months	200,000 I.U.
5.	30-36 months	200,000 I.U.

1. Five doses of vitamin A to be given to every child between 9 months and 3 years of age at six monthly intervals.
2. Promote intake of vit. A rich food which are easily available and cheap e.g. Spinach, Methi, Capsicum, yellow vegetables and fruits e.g. Carrots, Pumpkin, Papaya, Mango green leafy vegetables and fish, meat, butter, yolk etc.
3. Educate mother for giving colostrum and breast-feeding during ante-natal check-up and immunization.

#### **(v) Treatment:**

In a child with symptoms of night blindness, therapeutic vit. A should be administered.

- Administer 200,000 IU vitamin A immediately after diagnosis of vit. A deficiency.
- Another doses 200,000 IU after four weeks. (Dose in infant is 100,000 IU).
  - Children with eye lesions must be treated immediately with vitamin A first dose and refer immediately to a specialist.
  - Children having diarrhoea/measles/ARI are to be encouraged to take vitamin A rich food. If develop signs of vit. A deficiency give vit A one dose and refer to a specialist.
  - Encourage intake of vit. A rich food.

- Vit. A concentrate solution in the PHC and sub-centres is available in the form of flavoured syrup at concentration of 100,000 IU/ml.
- Vit. A syrup should be administered using 2-ml spoon provided with every bottle. A marked level full of 2-ml spoon contains 200,00 IU of vit. A.
- You must be alerted to look and report cases of night blindness.
- Assess vit. A coverage levels and corrective measures taken in the area from where a case of night blindness is reported.
- Actively search for vit A deficiency in an area where an outbreak of measles has occurred, which will prevent ocular damage and blindness.

**Vit. A prevents blindness**

### **3.7.10.2 IRON DEFICIENCY ANAEMIA**

#### **Introduction**

Iron deficiency anaemia is an important public health problem resulting in considerable morbidity and mortality in mothers and young children. It is the most wide-spread micro-nutrient deficiency in the world.

In India iron deficiency anaemia affects more than half the total population. It is most common amongst pregnant women, lactating women, and young children. The children below the age of 3 years have a higher prevalence of iron deficiency anaemia.

Cause: Anaemia is due to deficiency of iron in diet or increased losses as occurs in recurrent diarrhoea, worm infestation, chronic loss of blood.

Diagnosis: Recognized by paleness of the hands, lips, tongue and conjunctiva.



Estimation of Hb%, and stool exam for worm infestation.

Criteria for diagnosis of anaemia (WHO)

<b><u>Age group</u></b>	<b><u>Hb(g/dl)</u></b>
6 months – 6 years	<11
6 years – 14 years	<12

Treatment: Administration of (i) iron and folic acid tablets to 1-5 years. of children who have visible signs of anaemia.

Dose: Each child be given IFA one small tablet (IFA small 20 mgm) daily for 100 days.

(ii) *Mebendazole*: To be given 100 mgm twice daily (12 hrly) after food for consecutive three days for the treatment of helminthic infestation areas where hookworm infestation is endemic.

### **3.7.10.3 Prevention of Anaemia**

- Mother to be advised to give food rich in iron, e.g. egg, meat, liver, green leafy vegetables (e.g. drums stick leaves, palak etc.), dates, beetroot, Jaggery.
- Advise mother to maintain cleanliness to prevent diarrhoea, infection and infestations.
- Vit. C helps in iron absorption.
- Treat hook-worm infestations: Deworming.
- Health education.



## **UNIT - 4**

### ***ACUTE RESPIRATORY INFECTIONS (ARI)***

#### **STRUCTURE**

- 4.1 Introduction
- 4.2 What is ARI
- 4.3 Classification of ARI
- 4.4 Clinical Assessment of Pneumonias
- 4.5 Physical examination of Pneumonias
- 4.6 Management of Pneumonia
- 4.7 Home Care for Common cough/cold (no Pneumonia)
- 4.8 Prevention of Pneumonia

#### **LEARNING OBJECTIVES**

*At the end of this unit, you should be able to:*

- Understand the importance of ARI.
- Ensure standard case management of pneumonia in children under 5 years of age by training medical and other health personnel.
- Train the peripheral health workers to diagnose and treat children suffering from no pneumonia and pneumonia and refer children suffering from severe pneumonia and very severe illness.
- Educate mother about home management of cough and to recognize early signs of pneumonia for seeking medical help.
- Educate mother on exclusive breast-feeding from birth to 4-6 months, immunization and administration of vit. A solution.

## 4.1 INTRODUCTION

Acute respiratory infection ranges from the common cold, cough, ear infection and pneumonias. It is the most common cause of morbidity and mortality in children under the age of 5 years. Hospital based statistic shows that about 13 per cent in-patients deaths of paediatric ward is due to pneumonia.

A child in an urban area suffers from 5-9 episodes of respiratory infections annually during the first five years of life, each episode lasting for a mean duration of 7-9 days, whereas in rural areas the annual incidence per child is lower and ranging from 1-3 episodes. Without adequate treatment, the child may die within 4-5 days of onset of illness. Safe and relatively cheap and effective treatment is available for the treatment of pneumonia. If the therapy is started early many lives can be saved.

Morbidity	:	Similar in developing and developed countries.
Mortality	:	30 times greater in developing countries.

## 4.2 WHAT IS ARI?

ARI means an infection of any part of respiratory tract of less than 30 days duration except otitis media which is of less than 14 days.

## 4.3 CLASSIFICATION OF ARI

1. Upper respiratory tract infections (AURI): include common cold, pharyngitis, laryngitis, tracheitis, epiglottitis and otitis media.
2. Lower respiratory tract infections (ALRI): include bronchitis, bronchiolitis and pneumonias.



**4.3.1 Mode of Presentation :** Children with pneumonia generally present with symptoms of cough or and difficult breathing. For the practical purposes the cases are classified **as no pneumonia, pneumonia, severe pneumonia and very severe illness.**

Acute lower respiratory tract infection e.g. pneumonia is a serious life threatening illness with high mortality. The mortality due to pneumonia can be reduced by timely diagnosis, adequate and effective management with relatively cheap and effective antibiotics and good nutrition.

## **4.4 CLINICAL ASSESSMENT**

### **4.4.1 History taking**

- Age.
- If coughing, how long.
- Did the child has antecedent history of measles?
- History of diarrhoea/and fever.
- Inability to drink.
- Drowsiness.
- Convulsing.
- Fast breathing
- Chest indrawing
- Abnormal sounds e.g. stridor, grunting.
- Treatment if any

## **4.5 PHYSICAL EXAMINATION**

### **4.5.1 Fast breathing**

- Count respiration rate for one minute.
- Expose chest and abdomen before counting.
- Use second hand of wrist watch.

- Count respiration rate by looking to abdominal/lower chest wall movement.
- Count when the baby is quite or calm or sleeping.

**Fast breathing is present when the respiratory rate is:**

- 60 or more in a child less than 2 months of age.
- 50 or more in a child 2 to 12 months of age.
- 40 or more in a child 12 months to 5 years of age.

4.5.2 **Chest indrawing** : means inward movement of lower chest wall while breathing in (Inspiration).

Look for chest indrawing when baby is quite/calm or sleeping.

Condition	Action to be taken	Place of treatment
<b>No pneumonia</b> <ul style="list-style-type: none"> <li>• Cough</li> <li>• No fast breathing</li> <li>• No chest indrawing</li> </ul>	Home remedies No antibiotics	Home
<b>Pneumonia</b> <ul style="list-style-type: none"> <li>• Cough</li> <li>• Fast breathing</li> </ul> Breathing rate age 50/min 2m-12m or more 40.min 12m-60m or more No chest indrawing	Cotrimoxazole tablet oral	Home/Health centres
<b>Severe pneumonia/very severe illness</b> <ul style="list-style-type: none"> <li>• Fast breathing</li> </ul> Age < 2 months; breathing rate 60/min. or more with or without chest indrawing. 2 months – 12 months of age 50/min or more	Antibiotic Oxygen	Hospital with facilities of oxygen are available.

12 months to 60 months 40/min or more <ul style="list-style-type: none"> <li>• Chest indrawing</li> <li>• Inability to drink</li> <li>• Lethargic/excessive drowsiness</li> <li>• Stridor in a calm child</li> <li>• Cyanosis</li> <li>• Convulsions</li> <li>• Severe malnutrition</li> <li>• Hypothermia</li> </ul>		
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## 4.6 MANAGEMENT OF A CASE OF PNEUMONIA

### 4.6.1 *Pneumonia:*

In the developing countries bacterial pneumonia like *Streptococcus pneumonia* and *Hemophilus influenzae* type b are most commonest in the age group of 2m–5 years, then viral pneumonia. These organisms are sensitive to Cotrimoxazole which is the drug of choice for the treatment of pneumonia. The efficacy of Cotrimoxazole is similar to ampicillin and procaine penicillin and cure rate of about 95%, which is also less expensive and cost effective.

***The children suffering form pneumonia should be given Cotrimoxazole as in table 2.***

**Table - 2**

<b>Daily dosage shcedule of COTRIMOXAZOLE for five days</b>		
Age/weight	Paediatric tablet: Sulphamethoxazole 100 mgm and Trimethoprim 20 mgm	Paediatric syrup. Each teaspoon (5ml) Sulphametaoxazole 200 mgms. and Trimethoprim 40 mgms.
< 2months (wt. 3-5 kgs)	One tab. twice daily	Half tsf. (2.5ml) twice daily.
2-12 months (wt. 6-9 kgs)	Two tabs twice daily	One tsf. (5ml) twice daily
1-5 years. (wt.10-19 kgs)	Three tabs twice daily	One and half tsf. (7.5ml) twice daily.

- Should not give cotrimoxazole to premature babies and cases of neonatal jaundice.
- Child less than 2 months of age with rapid breathing, should be treated as severe pneumonia, preferably in a FRU.
- The tablets are to be crushed and mixed with water. The mixture should be given to the child with a spoon.
- Tell the mother to give cotrimoxazole tablet for 48 hours then report the condition of the child.
- If improvement, continue to complete five days.
- If no improvement/condition deteriorates, bring the baby any time for re-evaluation.

#### ***4.6.2 Severe pneumonia:***

Chest indrawing. Children in age group of 2 months to 5 years should be treated as given in Table-3.



**Table – 3**

Dose Frequency and Rate of Administration of Antibiotics in Severe Pneumonia.

Antibiotics <b>First 48 hrs.</b>	Dosage	Interval	Mode
Benzyl Penicillin	50,000 IU/kg	6 hrly.	IM
Or	body wt.		
Ampicillin	50mgm/kg/dose	6 hrly.	IM
Or			
Chloramphenicol	25 mgm/kg/dose	6 hrly	IM
<b>If conditions improves, continue for the next 3 days</b>			
Procaine Penicillin	50000/kg (Max 4 lacs unit)	once	IM
Or			
Ampicillin	50 mgm/kg/dose	6 hrly.	Oral
Or			
Chloramphenicol	(25 mgm/kg) dose	6 hrly.	Oral
<b>No improvement, for the next 48hr. Change antibiotic.</b>			
<ul style="list-style-type: none"> <li>▪ Change to chloramphenicol IM, if ampicillin was started initially.</li> <li>▪ Change to cloxacillin 25mgm/kg/dose 6hrly. IM along with Gentamicin 2.5 mgm/kg/dose 8 hrly IM, if chloramphenicol was started initially.</li> <li>▪ If condition improves continue chloramphenicol orally.</li> </ul>			
Symptomatic treatment for fever and wheeze if required.			
Regulate fluid and food intake.			
On discharge advise mother on home management.			

Treatment with antibiotics for at least 5 days. Continue treatment for at least 3 days after the child recovers.

If cloxacillin and gentamicin started continue it for 3 weeks.

#### **4.6.3 Very severe illness**

Can be because of meningitis, encephalitis, severe pneumonia etc. Hence appropriate diagnosis to be made by and treated. If there is difficulty in diagnosis and management the case to be referred to FRU.

Child having signs of very severe illness must be treated in a hospital with facilities for oxygen and intensive care.

Here the drug of choice is chloramphenicol IM for all cases.

*If condition improves after 48 hours:*

- Change IM chloramphenicol to oral chloramphenicol, and continue to complete total 10 days.

*If condition does not improve/or deteriorates after 48 hours.*

- Change over from chloramphenicol to IM cloxacillin and gentamicin I.M.
- On improvement continue for 3 weeks.

##### **4.6.3.1 Treatment of Pneumonia in a child aged less than 2 months.**

Cough, running nose and fever are not the usual features in young infants in pneumonia. There may be only fast breathing/indrawing chest. It is always severe and the low birth weight baby may die due to cold stress/hypothermia even in hot climate. In this state it is very difficult to differentiate between severe pneumonia, septicaemia and meningitis. But whatever it may be, treatment is the same.

These children are to be hospitalised. These children are to be treated with injection benzyl penicillin or injection ampicillin and gentamicin. **Here chloramphenicol is not the drug of choice.**

<i>Antibiotics</i>	<i>Dosage</i>	<i>Frequency</i>		<i>Route</i>
		Age <7 dys	7dys-2m	
Inj. Benzyl Penicillin	50000 IU/kg/dose	12hrly	6 hrly	IV/IM
Or Inj. Ampicillin	50 mgm/kg/dose	12 hrly	8 hrly	IV/IM
and Inj. Gentamicin	2.5 mgm/kg/dose	12 hrly	8 hrly	IV/IM

- Maintain the body temperature.
- Treat associated conditions if any.
- Continue exclusive breast-feeding,.

#### 4.6.3.2 Management of case of Wheezing

Wheezing is due to the obstruction to flow of air in the small air ways, which might be due to inflammation caused by infection as in pneumonia or allergic as in bronchial asthma.

##### (i) Wheezing child may present

- Wheezing without associated respiratory distress.
- Wheezing with respiratory distress.
- Recurrent wheezing

##### (ii) Management of Wheezing without associated respiratory distress

- Give oral Salbutamol as per the following dosages.

Child less than 10 kgs body weight, give 1 mgm 8 hourly orally after food.

Child weighing 11-19 kgs., give 2 mgm 8 hourly orally after food.

- Salbutamol is given only for a few days.

**(iii) Management of wheezing associated with respiratory distress and recurrent wheezing**

Here Rapidly acting broncho dilator is required to be given as follows:

▪ Nebulized Salbutamol (5 mgm/ml)	0.5 ml salbutamol plus 2 ml of sterile water may repeat after 20 min.
▪ Subcutaneous Epinephrine (adrenaline) 1:1000=0.1 percent	0.01 ml/kg body weight. may repeat after 20 minutes.
Subcutaneous Terbutaline	0.1 mgm/kg body weight. may be repeated after 30 min. upto max. of 3 times (total 0.3 mgm).

Wait for 30 minutes after the last dose of administration. If the child responds well, treat at home with oral salbutamol.

- If no improvement refer to a hospital for hospitalization.

**Advice to the mothers**

The mother plays a key role in the management of illnesses in infants and children. Majority cases of pneumonia are to be treated at home.

**4.6.3.3 So mothers must be advised on.**

- How to give antibiotics to the child in proper dosage.



- Continue adequate feeding including breast-feeding in small quantity and in frequent intervals as child may not be willing to take feed.
- Mothers should know the signs whether child is improving or worsening.
- Danger signs are to be explained to mothers so that she will recognize and will bring the child for treatment, failing which may cost her the life of the child. They are as follows:
  - Difficult and rapid breathing.
  - Chest indrawing.
  - Refusal of feeds.
  - Eating and drinking poorly.
  - Excessive sleeping/drowsiness.
  - Convulsion.
  - Cyanosis.

#### **4.6.3.4 Inform the mother for precautions to reduce the risk of pneumonia.**

- Keeping young infants warm and away from draught.
- Exclusive breast-feeding upto 6 months of age.
- DPT, Polio and Measles vaccination at the appropriate age.
- Prophylaxis Vit.A.
- Hand washing before feeding and touching the child especially young infants.
- Smoke and dust free environment.

- **Mother of sick children are themselves of poor health and anaemic. So they should be advised about their nutrition and birth spacing.**
- **Counsel them to adopt birth spacing in the interest of her and her child's health.**

#### **4.7 HOME CARE FOR COMMON COLD, COUGH AND FEVER ( NO PNEUMONIA)**

These children do not require treatment with antibiotics because:

- Majority of them are viral where antibiotic is not effective.
- May produce side-effects, no clinical effects.
- May produce resistant strains.
- Financial wastage.

##### ***4.7.1 What mothers should do: Advise her to do the following***

- Continue feeding as before. If child is unwilling to take food, give small quantities frequently.
- If breast-fed child, continue breast-feeding.
- Give sufficient fluid orally.
- Give paracetamol for fever.
- Clean the nose with normal saline drops, if nose is blocked with mucous secretions. Don't use medicated nasal drops which may be harmful.
- For cough and cold give honey, ginger, tulsi etc. but do not give to a baby below two months.
- Mother should be informed to look for signs of pneumonia and all signs of severe illness so that she will bring the baby to health personnels for treatment.

#### **4.8 PREVENTION OF PNEUMONIA**

- Exclusive breast-feeding for 6 months.
- Avoid exposure to dusty and smoky environment.
- Give DPT, BCG, measles and Polio vaccinations at the right age.
- Give Vit. A prophylaxis.
- Maintain proper and adequate nutrition.

## **UNIT - 5**

### ***DIARRHOEA***

#### **STRUCTURE**

- 5.1 Introduction
- 5.2 What is diarrhoea and classification of diarrhoea.
- 5.3 How diarrhoea is caused? Predisposing factors and pathophysiology.
- 5.4 Effects of diarrhoea.
- 5.5 How to diagnose and manage dehydrations.
- 5.6 What is ORS, how it can be prepared and given to patients.
- 5.7 Nutrition in diarrhoea.
- 5.8 Dysentery and its management
- 5.9 Persistent diarrhoea
- 5.10 How to prevent diarrhoea?

#### **LEARNING OBJECTIVES**

*At the end of this unit, you should be able to*

- Understand the importance and aim of management of diarrhoea in children.
- Educate health workers about diarrhoea and dehydration.
- Educate standard case management by training medical and other health personnel.
- Educate mother on home management of diarrhoea and to identify danger signs for seeking immediate medical care.

- Increase availability of ORS by providing free ORS packets at the health facilities and out-reach depots.
- Monitor hospital based data on ORS use, morbidity and mortality due to diarrhoea.
- Promote exclusive breast-feeding upto six months, proper complementary feeding, immunization i.e. BCG, DPT, Polio, Measles and Vit.A prophylaxis to infants.

## 5.1 INTRODUCTION

Diarrhoeal disease is the major cause of morbidity and mortality among children under five years of age (0-5 years). In an average the attack rate of diarrhoea is 2-3 per child per year. Maximum incidence is in second half of 1<sup>st</sup> year and 1<sup>st</sup> half of 2<sup>nd</sup> year of age.

Diarrhoea is a water-borne disease. The predisposing factors are, artificially fed baby (no/partial breast-feeding), unprotected water supply, poor sanitation, unsafe sewage disposal, increasing practice of bottle feeding, use of contaminated complementary foods and poor nutritional status of children. An exclusively breast-fed child gets on an average of 1.63 episodes of diarrhoea per year whereas artificially fed child gets 7.92 episodes per year. The death in diarrhoea is due to dehydration. Diarrhoea not only causes death but also malnutrition (loss of nutrients from body, anorexia and often restriction of food by mother and family members).

## 5.2 DEFINITION

Diarrhoea is defined as passage of liquid/watery stools. The recent change in consistency and character of the stools is the most important feature rather than the frequency of stool.

### 5.2.1 *What is not diarrhoea?*

- Passage of frequent formed stools.
- Passage of pasty stools in breast-fed infants.



- Passage of stool during or immediately after feeds due to initiation of gastrocolic reflex.
- Transitional stools on the 3<sup>rd</sup> to seventh day of life.
- In most cases the mother knows what is a diarrhoeal stool for her child.

## **5.2.2      *Classification of diarrhoea***

- 5.2.2.1      **Acute watery diarrhoea:** Starts suddenly and may continue for a number of days but not more than 14 days. Most of them are self-limiting and will last for 3-7 days.
- 5.2.2.2      **Dysentery:** Acute watery diarrhoea with visible blood in stool.
- 5.2.2.3      **Persistent diarrhoea :** begins acutely but is of unusually long durations, lasting more than 14 days.
- 5.2.2.4      **Cholera:** It is a form of acute watery diarrhoea. It is very important to diagnose it early in order to start treatment promptly. Delayed or inadequate treatment may cause death due to dehydration and circulatory failure.

### **When cholera should be suspected**

- If a child of 5 years of age or older develops severe dehydration from acute watery diarrhoea (usually with vomiting).
- Any patient comes with acute watery diarrhoea from an area, where there is an out-break of cholera.

## **5.3      HOW DIARRHOEA CAUSES DEHYDRATION**

Approximately 60% of child's body constitute water; which is present as extracellular fluid (ECF) e.g. blood, interstitial fluid and secretions and intracellular fluid (ICF). In diarrhoea loss of fluid is

from extracellular fluid compartment. So during diarrhoeal episode, large amount of water and electrolytes are lost. This loss of fluid during diarrhoea if not adequately compensated gives rise to dehydration, results in increased thirst, loss of skin turgor, sunken eyes, weak thready pulse, low blood pressure, cold extremities and reduced urine out-put. There is also loss of potassium which gives rise to abdominal distension and hypotonia of muscles. Loss of fluid and electrolytes without adequate replacement gives rise to dehydration and renal failure, ultimately malnutrition and death.

## 5.4 CONSEQUENCES OF DIARRHOEA

### 5.4.1 Loss of water and electrolyte (Dehydration)

### 5.4.2 Malnutrition

## 5.5 HOW TO DIAGNOSE AND MANAGE DEHYDRATION

TABLE - 1

### 5.5.1 Assessment of Dehydration:

	NO DEHYDRATION	DEHYDRATION	SEVERE DEHYDRATION
<b>1. Look</b>	Well alert	<i>Restless, irritable</i>	Lethargic or unconscious or floppy
<b>2. Thirst</b>	Not thirsty Drinks normally	<i>Thirsty Drinks eagerly</i> i.e. Increased thirst	Drinks poorly or not able to drink
<b>3. Skin Pinch</b>	Goes back quickly	<i>Goes back slowly</i>	Goes back very slowly
<b>4. Mouth and Tongue</b>	Moist	Dry	Very dry
<b>5. Eyes</b>	Normal	Sunken	Very sunken

*Presence of two or more signs including at least one highlighted gives the diagnosis of dehydration.*

**5.5.2 Clinical approach to diagnosis** A child has come to you with history of diarrhoea, how you will proceed with it? Write the name, address, age, nutritional status and any associated problems (if any).

**5.5.2.1 Note the frequency and duration of diarrhoea.**

**5.5.2. Know the type of diarrhoea.**

- (i) Acute watery diarrhoea.
- (ii) Dysentery.
- (iii) Persistent diarrhea
- (iv) Cholera

**5.5.2.3 Look for dehydration (mentioned in Table - 1 above)**

**5.5.3 Principles of management of diarrhoea**

*Fluid replacement.*

**5.5.3.1** There is heavy loss of fluid and electrolytes in acute diarrhoea (the mechanism which was discussed earlier) i.e. 5.3, so they should be replaced immediately irrespective of the aetiology of diarrhoea. ORS is the best available fluid and electrolyte for the replacement of loss. In early stages of diarrhoea, before dehydration sets in, and ORS packets are not available immediately, so water and HAF can be given sufficiently to prevent dehydration.

**5.5.3.2 Feeding**

It should be continued as before including breast-feeding in any form of diarrhoea and to be increased during the recovery period of diarrhoea to avoid malnutrition.



### 5.5.3.3. Drugs

The rational use of drug is essential.

- ORS is the drug of choice for all cases of diarrhoea. It is life saving when used timely in adequate quantities.
- Anti-microbials can be used in specific situations e.g. dysentery/cholera.
- Anti-motility drug, anti-secretory drug, binding agents, stimulants and steroids have no role in the treatment of diarrhoea, rather dangerous, so must be avoided.
- Usually vomiting in a child needs no treatment. Give ORS in small sips to which he/she tolerates.

### 5.5.4. Management of diarrhoea

90% of diarrhoeae cases do not develop dehydration. They can be managed at home with home available fluid (HAF) and continue breast-feeding and other feedings as before.

**5.5.4.1 Fluid therapy:** Replacement of fluids and electrolytes are essential for all types of diarrhoea. ORS is the best available solution for replacement of fluids and electrolytes. In the beginning of diarrhoea, HAF and water can be used. When dehydration sets in, ORS is the mainstay of treatment.

#### **PURPOSE OF FLUID THERAPY**

- Corrects deficits
- Replaces on going losses
- Provides normal daily intake.



### 5.5.4.2 Home available fluids

- The child having diarrhoea does not show the sign of dehydration, should be given **Home Available Fluids** liberally and frequently after each loose motion, such as rice water, butter milk, lassi with salt, lemon water with salt, soup, coconut water and plain water. Water is a good home available fluid if taken with food.
- For younger infants breast-feeding should be given frequently, which is an ideal fluid.

Soft drinks, and sweetened fruit juices, sweetened tea/coffee are to be avoided as they will cause harm because of high osmolality and will aggravate dehydration.

## 5.6 ORAL REHYDRATION SALT (ORS)

### COMPOSITION OF WHO ORS (Net Weight = 27.9 gms)

Ingredients	Weight (gms)	
Sodium Chloride.IP	3.5 i.e.	90 mEq/litre
Potassium Chloride. IP	1.5 i.e.	20 mEq/litre
Sodium Citrate IP	2.9 i.e.	30 meq/litrer
Glucose Anhydrous IP	20.0 i.e.	110 mmol/litre

### 5.6.1 How to prepare ORS solution

One packet of ORS is meant to be dissolved in one litre of water.

Procedure: (Demonstrate to Health Workers and mothers)

- Mothers must be taught how to measure one litre of water.
- First of all identify a measure commonly available at home e.g. cup/glass/empty cocacola bottle and tell the mother how many measures of that will make one litre.
- Wash hands thoroughly with soap and water.
- Take clean container which can hold one litre of water.
- Measure one litre of clean drinking water (not necessarily boiled and cooled) and keep it in a container.

- Open the packet of ORS and pour whole content into water.
- After pouring stir well with a clean long handle spoon to mix it completely.
- Now the solution is ready for use. Keep the solution covered.
- It can be used for 24 hours if not fully consumed then discard it and prepare fresh solution for use.

### ***5.6.2 How much ORS is to be given?***

**Tabel - 2**

HOW MUCH ORS TO BE GIVEN FOR REPLACEMENT OF ON GOING LOSS IN STOOL TO PREVENT DEHYDRATION.	
Age < 6 months	After each liquid stool Quatre glass (50 ml).
/ months–2 years	Quatre to half glass (50 to 100 ml)
2 to 5 years	Half to one glass (100 ml-200 ml)

### ***5.6.3 Child having diarrhoea but no clinical signs of dehydration***

- Mothers must be told to give home available fluids/ORS as long as diarrhoea lasts.
- Breast-feeding must be continued (appropriate for the age) **In exclusive breast-fed babies** frequent breast-feeding is sufficient to prevent dehydration.
- Always give undiluted milk who are on milk other than breast-feeding.
- Food normally taken by the child should be continued.

### ***5.6.4 Children having diarrhoea with dehydration should be kept under observation in the health centre/hospital for few hours and give ORS solution slowly and frequently***

- The purpose of fluid therapy in such case is to correct fluid and electrolyte deficit, to provide for ongoing losses and normal daily requirement.
- During first 4 hours. the child should receive 100 ml per kg of body weight. of ORS solution, given below:

**Table - 3**

<b>REHYDRATION THERAPY</b>					
<i>Approximate amount of ORS solution to be given in the first 4 hours.</i>					
<b>Age</b>	<4 months	4-11m	12-23m	2-4years	5-14years
<b>Wt.in kg</b>	<5	5-8	8-11	11-16	16-30
<b>ORS (ml)</b>	200-400	400-600	600-800	800-1200	1200-2200
<b>Measure (glass)</b>	1-2	2-3	3-4	4-6	6-11
<p><i>If child wants more ORS than shown above, give more.</i>  <i>Tell mother to give breast-feeding in between the feeds of ORS.</i>  <i>Infants, who are not breast-fed, give also 100-200 ml clean water during this period.</i></p>					

#### **5.6.5 Demonstrate to the mother how to give ORS solution**

- Give one teaspoonful of every 1-2 min. (may use a glass/cup and allow the child to drink directly).
- To an older child give frequent sips from a cup.
- If child vomits, wait for 10 minutes then start giving slowly.
- If ORS packets are exhausted then continue on HAFs till more packets are received from the health centre.
- If child develops puffiness of the eyelids, discontinue ORS. Give plain water/breast milk.

#### **5.6.6 A case of severe dehydration**

A child is severely dehydrated i.e. lethargic/floppy/unconscious/not able to drink/radial pulse is imperceptible or very feeble. These



signs develop when fluid and electrolytes are lost excessively. This child needs immediate rehydration using intravenous route.

#### 5.6.6.1 Indication of Intravenous Rehydration

- (1) Severely dehydrated child as mentioned above.
- (2) Where ORT is ineffective in correcting dehydration, (may be of any cause) and the condition deteriorates.

#### 5.6.6.2 Which fluid is to be used for Intravenous infusion

**Preferably: -** Ringer's Lactate  
**Acceptable: -** Normal Saline/  
**Unsuitable: -** Plain Glucose/Dextrose solution.

#### 5.6.6.3 How much solution is to be given Intravenously for how long?

**Table - 4**

Age	First give 30ml/kg of body in	Then give 70ml/kg of body wt.in	Total 100ml/kg body wt.in
Infants	First hour	Next 5 hrs.	6 hrs.
Older Children	First 30 minutes	Next 2 2½ hrs	3 hrs.

- Reassess the child every 1-2 hours during IV fluid therapy. If no improvement of dehydration, give IV infusion more rapidly.
- If patient is able to drink then give ORS orally along with IV infusion.
- If signs of dehydration disappears on completion of infusion fluid-100ml/kg of body weight. in 6 hours, then start oral ORS as given in section 5.6.2 and 5.6.4 If signs of dehydration still persist then continue IV as before.
- If due to some reason IV route is not possible then give ORS through nasogastric tube.



#### **5.6.6.4 When oral rehydration is to be discontinued**

*Oral rehydration should be discontinued if the child:*

- Persistently vomits.
- Not able to take oral rehydration fluids.
- Becomes more dehydrated.
- Fails to pass urine for 8 hours.
- Develops complications like abdominal distension, respiratory distress, drowsiness or convulsions.

**In all these situations child needs hospitalisation and intravenous infusion.**

#### **5.6.6.5 Ensure availability of ORS at village level**

One of your duties is to ensure availability of ORS for 24 hours a day in every village under your jurisdiction. If ICDS is in operation, make it available with Anganwadi workers; or the local depot holders for chloroquin and contraceptive etc. you can take the help of village leaders as well. If exhausted in particular place, make it available immediately.

### **5.7. FEEDING IN DIARRHOEA**

- Feeding is to be continued as before to prevent deterioration of nutritional status, which often accompanies such an illness.
- Usually during diarrhoea child is anorexic, so he/she needs to be coaxed and not forced to eat.
- Those who are on exclusive breast-feeding, continue breast-feeding as before and also even rehydration with ORS.
- Those who are on outside milk give them undiluted cow's/buffalo's milk.
- Child under one year of age must be advised about breast-feeding and proper weaning.
- After child recovers, regains appetite, give more food than before to regain lost weight.

## 5.8 DYSENTERY (BLOOD IN STOOLS)

When blood is present in stool called dysentery, causes may be *Shigella*, *Enteroinvasive E. coli* and *Entamoeba histolytica*. It is less common than acute watery diarrhoea; very often it is associated with systemic complications, adverse nutritional impact and high mortality rate.

### Management:

#### Replacement of fluid loss:

Give ORS fluid therapy as already been discussed under acute watery diarrhoea. (Section 5.6.2 and 5.6.4)

#### Nutritional:

Continue as discussed earlier under acute watery diarrhoea. (Section 5.7).

#### Drugs:

##### (a) *Cholera:*

- \* Doxycycline 6 mgm/kg/day in a single dose for 3 days or Tetracycline 50 mgm/kg/day in 4 divided doses for 3 days.
- \* Erythromycin 30 mgm/kg/day in 3 divided doses for 3 days.

##### (b) *Shigella dysentery*

Cotrimoxazole (Paediatric tablet).

One tab. x 2 daily for 5 days (under 2 months).

2 tabs. x 2 daily after food for 5 days (2 – 12 months).

3 tabs x 2 daily after food for 5 days (1-5 years. of age).

Or Nalidixic acid 55 mgm/kg/day in 4 divided doses for five days after food.

- \* If Fever: Give paracetamol 30-40 mgm/kg/day P.O. every 6-8 hours interval.

(c) *Acute Intestinal Amoebiasis:*

Metronidazole 30 mgm/kg/day on 3 divided doses after food 5-10 days.

(d) *Acute giardiasis:*

Metronidazole 15 mgm/kg/day in 3 divided doses after food for 5 days.

## 5.9 PERSISTENT DIARRHOEA

An acute episode of watery diarrhoea or dysentery may last upto 14 days, but it persists longer it is classified as persistent diarrhoea.

- Causes*
- \* Persistent infection with some intestinal pathogens.
  - \* Malabsorption : Particularly of carbohydrate and fat following mucosal damage by pathogens or malnutrition.
  - \* Rarely dietary protein intolerance.

### Key Message

- Persistent diarrhoea which lasts for more than 14 days

### Treatment:

Fluid therapy and use of antimicrobial as in acute watery diarrhoea and dysentery.

### Diet:

Diet is the most important part in the management of persistent diarrhoea. Usually child develops anorexia and refuses to take food.

So energy rich food to be given in small amounts but frequently.

#### **Diets for Persistent Diarrhoea:**

##### **Low milk diet.**

Cereal + milk or curd.

##### **Animal milk free diet.**

Cereal + Legume + Oil.

##### **Starch free diet.**

Glucose + Oil + Protein (egg, pureed chicken).

The child should gain weight with adequate in-take of food. If the child fails to gain weight then it could be treatment failure, and may develop.

- Dehydration.
- Severe abdominal distension.
- Severe weight loss inspite of taking adequate diet.
- Diarrhoea persists even after 6 days of treatment.

\* Children in whom above signs appear and children of less than 6 months old are to be hospitalised.

#### **Key Messages**

- Acute watery diarrhoea is mostly self-limiting and of short duration.
- Absorptive capacity of intestines is well preserved, feeding to be encouraged.
- The loss of fluid and electrolytes in diarrhoea is isotonic.
- The oral rehydration fluid should be isotonic and should contain glucose and electrolytes.
- In diarrhoea start HAF/ORS immediately, should not wait for the signs of dehydration to appear.



## 5.10 PREVENTION OF DIARRHOEA

- Educate mother about the causes of diarrhoea.
- Exclusive breast-feeding upto 4-6 months of age.
- Measles vaccination at 9 to 12 months of age.
- Keep food covered to avoid contamination.
- Avoid taking road side food.
- Wash hands before and after eating.
- Always use safe drinking water.
- Always use latrine for defaecation.

### Exercise:

1. Rina has brought her child aged 8 months who is having watery loose motions 6-8 times/day for the last two days. But the child is active and wants to take water frequently.
  - (a) What is the problem with this child?
  - (b) How you will manage?

Today is the fourth day of having diarrhoea, the child is lethargic, irritable, now it is 2 p.m. He has not passed urine as yet since the morning and is not able to take any feed.

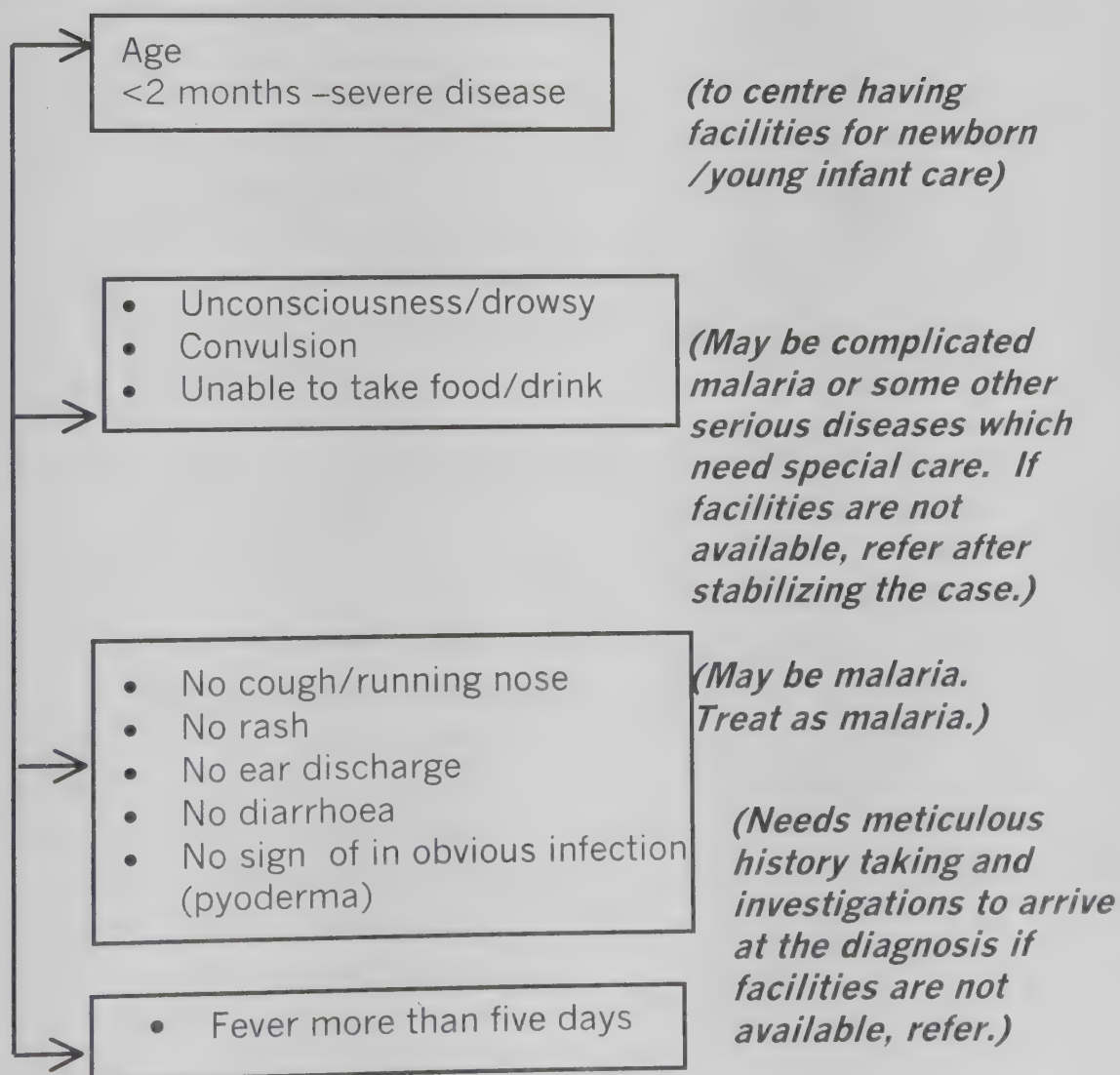
- (a) What is the problem?
- (b) How will you assess the state of hydration of this child?
- (c) Write down how you will manage this case.



## UNIT – 6

### FEVER

#### Fever



## STRUCTURE

- 6.1 Introduction
- 6.2 Role and responsibilities of medical officer under NMEP.
- 6.3 Diagnosis of malaria.
- 6.4 Management of a case of uncomplicated and complicated malaria.
- 6.5 Identification of cases for referral to district hospital.
- 6.6 Prevention of malaria.

## LEARNING OBJECTIVES

*At the end of this unit, you should be able to:*

- Discuss job responsibilities pertaining to NMEP.
- Diagnose malaria clinically based on the symptoms and signs.
- Manage a case of uncomplicated and complicated malaria.
- Identify case of malaria for referral to district hospital.
- Educate health functionaries/community how to prevent malaria.

### 6.1 INTRODUCTION

The commonest manifestation of any disease is fever. It should not be considered as a simple symptom as it may be a manifestation of very severe disease e.g. pneumonia, meningitis, encephalitis, cerebral malaria etc.

Many people have studied malaria on its various aspects but very few have focussed its effects on children who are the worst sufferers, particularly between the age of 6 months to 5 years. These children suffer from anaemia, retardation of growth and development, specially the intellectual development. Next to the children are the pregnant women who suffer more. They develop anaemia, deliver low birth weight babies with poor intellectual development and frequently end in either premature delivery or foetal loss.



In India, the annual incidence of malaria is about 22% with 0.8 million deaths. There is also heavy national economic loss due to malaria.

There are four human malarial parasites e.g.

- (i) *P. vivax*, (ii) *P. falciparum*, (iii) *P. malariae* and (iv) *P. ovale*

Only the first three are prevalent in India.

The Primary Health Centre (PHC) is the nodal point for detection of malaria cases and its treatment. So you as the PHC medical officer have great responsibility in the revised strategy of decentralised planning of malaria control programme. You shoulder responsibility of administrative management as well as treatment and management of serious cases of malaria i.e. *P. falciparum* infection. If proper facilities are not available, you should refer the case to appropriate referral centre after proper stabilization to prevent mortality due to malaria.

It is therefore necessary that you should be trained adequately on various aspects of malaria.

## 6.2 YOUR ROLES AND RESPONSIBILITIES UNDER NMEP

You will:

1. In consultation with DMO and community leaders, you select FTD (Fever Treatment Depot) and DDC (Drug distribution centre) holders and Malaria Link Volunteer (M.L.V.) for the villages under your PHC.
2. Select headquarters of DDCs, FTDs and MLV.
3. Make fortnightly calendar for house to house visit of MPW [M] in consultation with DMO.
4. Supervise all malaria clinics and PHC laboratory in your area.
5. Look into the quality of blood smears, staining efficiency of microscopic examination and check the quality of stains and their storage.

6. Periodically review backlog of unexamined slides and make arrangements for their early examination.
7. Ensure adequate supplies of antimalarials and microslides to FTD, DDC and MLV.
8. Ensure that radical treatment to positive cases with recommended drug schedule is administered within 48 hours of blood smear examination.
9. Monitor drug failure in microscopically confirmed malaria cases and report the same to the concerned authority.
10. Provide referral services within the facilities available at PHC to severe and complicated malaria cases.
11. If the case cannot be managed in the PHC, refer the severe and complicated malaria cases to second referral centre but only after giving antimalarials and blood smear collection/examination.
12. Conduct investigation of deaths due to malaria in the proforma given in management module and send the death report to the concerned authorities.
13. Ensure that you and other MO PHC refer all fever cases to malaria laboratory for blood smear examination before giving final prescription/medicine to a fever case.
14. Ensure that records of clinically diagnosed cases of malaria are maintained at PHC.
15. Ensure that lab technician maintains MF-7, 8 and 9 registers as well as other charts and graphs showing malaria situation in the PHC.
16. Prepare the list of high-risk sub-centres as per the recommendations of the Expert Committee on Malaria – 1995, and complete the proformae at Appendix – I and II (A) and provide relevant data to DMO after filling the proforma II (D) given in the operational manual.
17. While you are on tour, verify the work of MPW (M) and MPW (F) in respect of malaria case detection and treatment.
18. Perform data analysis for monitoring malaria situation and ensure that adequate steps are being taken to prevent focal outbreaks in his area.
19. In case of likely epidemic outbreak, institute immediate

- containment measures with the help of DMO and Mobile Epidemic Control Unit.
20. Participate in intersectoral co-ordination for malaria control in the PHC area.
  21. Help in supervision of insecticidal spray operations.
  22. On tour, make concurrent and consecutive supervision of quality and coverage of insecticidal spray.
  23. Impart fresh reorientation training to paramedical staff in respect of malaria control activities.
  24. In case of any breakdown, inform the DMO and help him in implementation of residual insecticidal spray by participating in removing any bottlenecks impeding the progress of spray.
  25. Train MPWs, DDC, FTD, MLV and supervisory paramedicals, as per modules provided.

### **6.3 DIAGNOSIS OF MALARIA**

Diagnosis of malaria clinically i.e. symptoms and signs of malaria and blood smear examination for malaria parasites.

#### ***6.3.1 Clinical presentation of classical malaria***

**COLD STAGE**      Range-chilly sensation to uncontrollable shivering.

Duration ½ to 2 hours

**HOT STAGE**      Immediately follows cold stage

Range-up to 104° F (40° C)

Duration 8 to 10 hours

#### ***6.3.2 Other symptoms***

- Headache, bodyache, vomiting.
- Remission-by crisis after sweating.
- Frequency initially-daily, remittent, later-intermittent.



### 6.3.3 Other signs and symptoms

- Palpable spleen-after 3-6 bouts of fever.
- Liver enlarged and tender.
- Jaundice in long standing cases.
- Hyperpyrexia, convulsion, disorientation, photophobia.

### 6.3.4 In young infants

- The classified description of symptoms given above may be absent in young infants.
- On the other hand may have low-grade fever without chill/shivering/rigor.
- All fever with chill is not malaria.
- Malaria fever may be associated with respiratory or gastro intestinal symptoms.
- So in children cases of fever will be diagnosed as malaria on high degree of suspicion and blood smears examination.

## SALIENT FEATURES OF MALARIA – DIFFERENT SPECIES

Species	Severity of signs and symptoms	Duration of single infection	Periodicity of fever	Complications
<i>P.falciparum</i>	Moderate	1 to 2 years	Daily or alternate day	<ul style="list-style-type: none"><li>- Hyperpyrexia</li><li>- Anaemia</li><li>- CNS :Cerebral Malaria</li><li>- Renal, Hepatic and Intestinal malaria</li><li>- Shock, collapse and death</li></ul>
<b>P.vivax</b>	Mild to Moderate	3 to 4 years	Alternate days (Benign tertian)	<ul style="list-style-type: none"><li>- Anaemia</li><li>- Emaciation</li><li>- Spleenomegaly</li><li>- Hepatomegaly</li></ul>
<b>P.malariae</b>	Mild	4 to 30 years	Every fourth day (Quartan)	As in <i>P.vivax</i> nephrosis



### **6.3.6 *In case of fever, malaria should be suspected in***

- i. An unexplained fever.
- ii. Pregnant women.
- iii. After child birth in post-partum period.
- iv. Accidents.
- v. Post operative period.
- vi. Malnutrition
- vii. In association with acute or chronic infections.
- viii. Blood transfusion.

**6.3.7** Blood smear examination for malaria parasite: during fever take blood from the patient for thick and thin smear and examine for malaria parasite after proper staining.

### **6.3.8 *Complications of p.falciparum malaria***

**The direct complications due to P.faciparum infection are :-**

1. Hyperthermia.
2. Anaemia.
3. Hypoglycaemia.
4. Dehydration.
5. Pulmonary oedema.
6. Cerebral malaria.
7. Shock-general collapse-algid malaria.
8. Gastro-intestinal manifestations.
9. Acute renal failure.
10. Haemolytic jaundice-liver damage.
11. Black water fever, haemoglobinuria.

12. Petechial haemorrhages. Mostly due to pathological change in RBC and blockage of internal capillaries.

### **6.3.9 Differential diagnosis-cerebral malaria**

Common Features	-	Patient with hyperpyrexia suddenly goes into coma.
Heat Stroke	-	Occurs during summer, exposure to heat, absence of sweating.
Meningitis	-	Gradual onset, neck rigidity, CSF changes.
Viral Encephalitis	-	Epidemic of cases.
	-	Several cases with similar history.
	-	Neck rigidity.
	-	Typical headache.
	-	Post-monsoon season.
Cerebro vascular episodes	-	Sudden origin
	-	CSF changes
	-	Higher age group
	-	Characteristic history
Hypersensitivity/Encephalopathy/Encephalitis	-	History of long standing hypertension
	-	Onset sudden
	-	CSF changes
Hypo or Hyperglycaemic coma	-	History of diabetes
Uraemic and hepatic disease.	-	History of chronic kidney/liver
coma		
Exclude	-	Epilepsy, Typhoid, encephalopathy, brain abscess, Narcotic poisoning

## **6.4 MANAGEMENT OF MALARIA**

### **6.4.1 Principles of management of uncomplicated malaria**

- Use of anti-malarials.

- Hyperthermia: Tepid sponging, paracetamol tablet 5 mg/kg body weight.
- Dehydration: IV fluid glucose saline.
- Convulsion: Diazepam 0.15 mg/kg body weight IV slowly.
- Anaemia: oral iron and folic acid tablet.

## **USE OF ANTI-MALARIALS FOR TREATMENT OF MALARIA**

### **Treatment of acute attack**

- i. Clinical and parasitological remission.
- ii. Parasitological cure-radical treatment.

### **Prevention of transmission**

- Gametocytocidal action
- Sporontocidal action

#### **6.4.1.1 Revised drug policy – 1995**

##### **Presumptive Treatment**

Given:

- To all fever cases or cases with history of fever during past 15 days even where no blood smears are collected like DDC, etc.
- To all persons irrespective of age and sex including infants and pregnant women.
- By all FTD/DDC holders, VLWs, MPWs (M&F), Health Supervisors (M&F) and PCDs.

#### **6.4.1.2 *In low risk areas-by all agencies***

- Single dose of Chloroquine phosphate 10 mg/kg body weight i.e. 600 mg adult dose (4 tablets).

## AGE-WISE DOSAGE

Age in years	mg. Base	No. of Tablets
<-1	75	½
1-4	150	1
5-8	300	2
9-14	450	3
15 and above	600	4

### 6.4.1.3 In High Risk Areas Up to Sub-centre Level

25 mg/kg. Body weight. of Chloroquine base over three days (10mg/kg body weight each on first and second days and 5 mg/kg. Body weight on third day) along with a single dose of Primaquine 0.75 mg./kg.body weight on first day.

## AGE-WISE DOSAGE

Age in Yrs.	First Day		Second Day	Third Day
	Chloroquine (mg base)	Primaquine (mg base)	Chloroquine (mg base)	Chloroquine (mg base)
<-1	75	-	75	37.5
1-4	150	7.5	150	75.0
5-8	300	15.0	300	150.0
9-14	450	30.0	450	225.0
15 & above	600	45.0	600	300.0

### 6.4.1.4 Radical Treatment (R.T.)

- All microscopically +ve cases to be given Primaquine for gametocytocidal and antirelapse action.
- In high-risk area – Pf cases, given 3 days presumptive treatment with 1500 mg. Chloroquine + 45 mg. Primaquine need not be given RT.



In high risk area – Pv cases, given 3 days presumptive treatment with 1500 mg. Chloroquine need not be given further but Primaquine is to be given for 5 days.

#### 6.4.1.5 For *P.vivax*, *P.malariae*, mixed infection

Adult Dose : Single dose of 600 mg. Chloroquine + 15 mg Primaquine on the 1<sup>st</sup> day followed by 15 mg Primaquine daily for another 4 days.

#### AGE-WISE DOSAGE

<b>Age in Yrs</b>	<b>Tablet Chloroquine (150 mg base)</b>		<b>Tablet Primaquine (2.5 mg. Base)</b>	
	<b>Single Dose</b>	<b>No Tabs</b>	<b>Daily dose</b>	<b>No. Tabs for 5 days</b>
<-1	75	½	-	-
1-4	150	1	2.5	1
5-8	300	2	5.0	2
9-14	450	3	10.0	4
15 & above	600	4	15.0	6

**Infants and pregnant women are not to be given Primaquine.**

#### 6.4.1.6 R.T. (Radical Treatment) for *P.falciparum* infection

Adult Dose: 1500 mg. Chloroquine in three divided daily doses (i.e. 600 mg. Each on 1<sup>st</sup> day and 2<sup>nd</sup> day and 300 mg on 3<sup>rd</sup> day) + single dose of 45 mg Primaquine on 1<sup>st</sup> day.

#### 6.4.1.7 R.T. (Radical Treatment) for Chloroquine resistant *P.falciparum* areas

Sulphalene/Sulphadoxine	1500 mg	
+		
Pyrimethamine	75 mg.	Single Dose

(3 Tablets)

Thereafter

Primaquine

45 mg.

Single Dose

These drugs should not be given on the same day due to precipitation of haemolytic crisis in G6PD deficient cases.

Drug administrator will administer Sulpha combination with instruction to consume Primaquine on the following day.

### AGE-WISE DOSAGE

Age in Yrs	Sulfalen/Suphadoxine + Pyrimethanmine		Primaquine	
	mg. base	No tabs 500 mg + 25 mg	mg base	No tabs (15 mg.)
<1	125 mg + 6.25 mg	$\frac{1}{4}$	.	.
1-4	500 mg + 25 mg	1	7.5 mg	$\frac{1}{2}$
5-8	750 mg + 37.5 mg	1 $\frac{1}{2}$	15.0 mg	1
9-14	1000 mg + 50 mg	2	30.0 mg	2
15 & above	1500 mg + 75 mg	3	45.0 mg	3

In cases resistant to above drugs and in severe and complicated malaria with *P.falciparum* infection (microscopically confirmed) I.V. Quinine Dihydrochloride given in doses as under:

10 mg/kg body weight thrice daily as intravenous infusion in 5% dextrose/glucose solution over 4 hours.

After regaining consciousness, same dose schedule is given orally to complete 7 days treatment.

Note : RT for *P.vivax* will be the normal NMEP schedule.

### 6.4.2 Management of complicated malaria

Patients who cannot take or retain oral anti-malarials.

Quinine: I.V. 10 mg/kg body weight slowly over 3-4 hours, 3 doses in 24 hours a total of 30 mg/kg body weight in 5% glucose/dextrose.

- I.M. injection - drug absorption erratic due to circularity disturbance.
- Quinine I.M. produces complications.
  - Local induration, abscess.
  - Sometimes gangrene and paralysis if given improperly near an artery or a nerve.

I.V or I.M. Chloroquine not well tolerated by children. I.V. or I.M. Chloroquine produces sudden hypotension and collapse and fatality specially in children and pregnant women.

If Quinine is not available, Chloroquine 3.5 mg/Kg body weight I.V. over 2 to 8 hours Total dose for 24 hours is 10 mg./Kg body weight.

#### Precautions

- Monitor for hypoglycemia.
- Repeated blood sugar or repeated urine examination for glucose.
- Look for cardiac complications.

#### *Hyperpyrexia*

- i) Tepid sponging.
- ii) Wrap patient in wet sheet and keep him under a fan.
- iii) Paracetamol 5 mg body weight to be given parentally.

#### *Dehydration*

- I.V. saline, or glucose

- Maintain balance slightly on the negative side.

## **6.5 IDENTIFICATION OF CASES FOR REFERRAL TO DISTRICT HOSPITAL**

1. Cerebral malaria patients not responding to initial treatment with I/v Quinine.
2. Severe anaemia warranting blood transfusion.
3. Bleeding and clotting disorder.
4. Haemoglobinuria.
5. Pulmonary oedema.
6. Cerebral malaria complicating pregnancy.
7. Oliguria not responding after correction of fluid deficit and administration of diuretics.
8. Fluid electrolyte and acid base disturbance.

## **RECORDS**

You will send the case sheet along with the patient, indicate the anti-malarial(s) administered, its dosage, time of administration and report on blood smears and other investigation for guidance to the second referral level.

## **6.6 PREVENTION OF MALARIA**

- ◆ Try to control mosquito breeding.
- ◆ Avoid mosquito bite.
- ◆ Chemoprophylaxis.



# Adolescent Health

for

## M.O.(P.H.C.)





# ***ADOLESCENT HEALTH***

## **LEARNING OBJECTIVES**

*At the end of the session you should be able to:*

- ◆ Describe the physical and physiological changes during adolescence.
- ◆ Explain the psychological and behavioural changes during adolescence.
- ◆ Discuss the importance of nutrition during the period of adolescence.
- ◆ Describe the importance of personal hygiene.
- ◆ Discuss major reproductive health problems among adolescents.
- ◆ Explain your role as a health worker in educating the parents, teachers, and community including adolescents.

## **CONTENTS**

1. Introduction
2. Physical and Physiological changes during adolescence.
3. Psychological and behavioural changes
4. Nutrition and health needs in adolescence
5. Personal hygiene
6. Health problems in adolescence.
7. Crucial role of family and community in adolescent health
8. Key points.

## **1. Introduction**

Adolescence is a period of transition from childhood to adulthood. It is the period of life between age of 10-19 years.

This period is very crucial, since these are the formative years in the life of an individual when major physical, psychological and behavioural changes take place. This is also an impressionable period of life. This is also the period of preparation for undertaking greater responsibilities including healthy responsible parenthood. Future of a society depends on adolescents and they form a great human resource for the society.

Health problems of adolescents are very different from those of younger children and older adults. Due to lack of accurate information, adolescents are prone to various behavioural and reproductive health problems. The period of transition from childhood to adulthood is hazardous for the adolescent health because they develop behavioural problems in absence of proper guidance and counselling. As a health worker, you can play very important role in preventing these problems.

## **2 Physical and physiological changes during adolescence**

**2.1 Puberty in girls:** In girls physical changes may begin at around 10 years and may reach their maximum growth by around 14 years. Thereafter growth continues at slower rate till the age of 18 years. During this period, in female, subjects the secondary sexual characteristics appear such as appearance of hair in the pubic area, and breasts begin to grow. Other changes include accelerated growth and development of genital organs viz. vulva, vagina, uterus and ovaries. Ovaries begin to ovulate at around 11-14 years once every 28 days.



## **2.2 Menarche and Menstrual cycle**

Menarche is the onset of first menstruation which occurs in a young girl at around 12 years. This is often recognized as the onset of maturity in girls. There are variations in the age at which menarche occurs. Good nutritional status will lower the age at menarche i.e. girl will attain menarche earlier, while in malnourished girls menarche is delayed. If menstruation has not started by 16 years you should counsel the girl's parents to consult the medical officer at a health facility i.e. PHC/CHC.

The ovum produced by the ovaries when unites with the male sperm, fertilization occurs and leads to pregnancy. If fertilization does not take place menstruation occurs.

Menstruation occurs once a month as a regular rhythmic period. Menstrual cycle is a continuous process. It remains as a normal physiological phenomenon throughout the childbearing years of the young women except during pregnancy and lactation and stops permanently at menopause approximately between the age of 45-55 years.

**2.3 Puberty in boys:** Puberty in boys usually appears later than in girls. It may begin with change in voice, growth of hair on chin, under arms, face, chest and pubic region. Development/enlargement of external genitals also takes place and sperm production starts. Occasionally penile erection and involuntary ejaculation also occur. The adolescent boys should know that all these changes are normal and natural and there is no need to be ashamed of them or frightened.

### **3. Psychological and behavioural changes**

During this transition phase from childhood to adulthood due to rapid physical and sexual changes in the body, the adolescent develops anxiety and apprehension. Adolescence is a time for exploration, adventure and discovery of one's own body and one's capability and potential. Some times this can lead to confusion and to experimentation with harmful substances like drugs, alcohol etc. and risky behaviour like risky driving.

Sometimes expression of sexual urge by adolescents may lead to anger among adults while among adolescents this may lead to feeling of fear, guilt and shame. Often adolescents hesitate to make communication about sexual development and other related matters with elders.

In case they are not given appropriate information and education on these normal physical, sexual and psychological changes they are prone to health risk behaviour such as sex experiments and drug abuse leading to teenage pregnancy, contracting RTI/ STI, HIV/AIDS, injuries, accidents, violence, rape, homicides, suicides etc.

### **4. Nutrition and health needs in adolescence**

The nutritional requirement of adolescents is more due to rapid growth spurt and increase in physical activity.

You have to ensure that during this period, the adolescents are encouraged to develop healthy eating habits and life style. Good nutrition is equally important for proper growth of both male and female adolescents.

Adolescents need more of all nutrients particularly calcium, iodine and iron. The need for more iron in adolescents is due to growth spurt and the onset of menstruation. Inadequate iron stored during adolescence before conception is a major cause of iron deficiency anaemia during pregnancy, which aggravates the risks

during pregnancy. In endemic areas incidence of Iodine deficiency disorders is high resulting in retardation of growth, mental retardation and psychomotor development. They should take calcium rich food like milk and milk products, consume iodized salt and iron-rich food such as green leafy vegetables, whole pulses, jaggery, meat, poultry, fish etc.

Stunted and under-nourished girls are more likely to have complications during pregnancy and give birth to low birth-weight babies.

You should educate the community and family members about the importance of healthy eating habits and nutritious foods.

## **5. Personal hygiene**

It is the one of the basic components of the measures for protection of health. Adolescents should take care of personal hygiene such as:

- Clean hands thoroughly before and after taking food and after going to toilet.
- Clean teeth and tongue twice daily once in the morning after leaving bed and 2<sup>nd</sup> time before going to bed at night.
- Must take bath daily.
- Boys should give attention to clean “Smegma” i.e. (a thick secretion collected under the fore-skin of the penis) during bathing and after urination.
- Boys and girls should keep the groin clean and dry otherwise fungal infection, leading to itching etc. will develop.
- Girls should use clean clothes, pads or sanitary napkins during periods. It should be changed frequently and the part should be kept clean and dry. Adolescent girl may have itching around genitalia and groin after menstruation for which one should not be worried.
- Sometimes girls may have vaginal discharge which may be smelling/ stains clothes. In such case she should contact doctor with whom she has confidence.



- Close to the urethral opening are the vaginal opening and anus. So always wash after passing urine. Washing after passing stool and urine must be from front to back and not reverse, as there is chance of urinary infection.

## **6. Health problems in adolescence**

Some health problems among adolescents are consequence of certain childhood infections like repeated diarrhoeal and respiratory infections, polio-myelitis etc. or other factors affecting health status like malnutrition etc.

### **6.1 *Irregular Menstrual cycle***

Irregular bleeding is sometimes seen after menarche. You should reassure the girl and her parents and advise her to take nutritious diet. In most of the cases the periods get regular within about 2 years of menarche. If they do not get regular menstrual bleeding, then you should refer her to MO (PHC).

### **6.2 *Under-nutrition***

Under-nutrition among adolescent girls is major public health problem in India. Under-nutrition during childhood and adolescence leads to impaired growth, anaemia, iodine deficiency etc.

Some other problems originating during adolescence may have life long consequences like use of tobacco, alcohol, drugs and harmful substance, etc.

### **6.3 *Unprotected sex and unwanted/unplanned pregnancy***

Since adolescent sexuality remains taboo in many societies, there is widespread ignorance among adolescents about risks associated with unprotected sexual activity. Unprotected sex may lead to unwanted/unplanned pregnancy which in turn may lead to increased demand for induced abortion. Pregnancy among unmarried adolescent girls may lead them to seek abortion services



from untrained practitioners and quacks and become victims of the consequent complications. Termination of unwanted pregnancy through induced abortion among adolescent girls cause greater risk to life than in adult women. Even if pregnancy continues, tendency to hide the same and to avoid proper antenatal care among adolescents may lead to serious complications of pregnancy and child birth.

#### **6.4 *Risk of pregnancy in adolescence***

Health of adolescent girls is at high risk if they are married at very young age which leads to consequent early child bearing. The chance of anaemia, retarded foetal growth, premature birth and complications during labour are significantly higher for adolescent mothers and may even lead to death.

#### **6.5 *Unprotected sex and sexually transmitted diseases.***

A major consequence of unprotected sex among adolescents is the change of infection from STDs which include syphilis, gonorrhea and HIV/AIDS. Young adolescents of both sexes who engage in unprotected sexual activities are highly vulnerable to STDs.

Acquiring STDs during adolescence often results in serious consequences in future like infertility, pelvic inflammatory disease, ectopic (tubal) pregnancy etc.

#### **6.6 *How to prevent adolescent pregnancy and STDs?***

Adolescent pregnancies are high risk pregnancies (for details refer to maternal health block) Hence for delaying pregnancies there is need to delay age at marriage. This can be achieved through advocacy, counselling and social as well as legal actions.

Counselling of adolescents can enable them to take proper decisions to prevent pregnancies by adopting abstinence or use of contraceptives.

Counselling can also help them to take decision for adopting safe abortion services in case of unplanned/unwanted pregnancy.

Use of condom not only provides protection against unwanted pregnancies but also against STD and HIV/AIDS. Counselling and education may be provided to the adolescents regarding need for practice of safe sex not only to avoid pregnancy but also for protection against STDs including HIV/AIDS.

Remember that adolescents have a right to complete, correct and detailed knowledge and information relating to their development; physical and psychological changes that take place during adolescence; sexuality in human beings and its implications on their health as well as means to protect themselves from reproductive health related problems.

## **7. Crucial role of family and community in adolescent health**

Family has a crucial role in shaping the adolescents behaviour. Parents and adults in the family must ensure a safe and secure and supportive environment for the adolescents during their formative years of growth and development. Family members need to be informed and educated in this regard. A positive and encouraging attitude among parents and family members to interact with adolescents and to give clarifications and correct information on their doubts will facilitate better relationship of trust and confidence.

### ***7.1 Your role to educate the community to help adolescents***

Adolescents confront a number of problems because of the lack of authentic knowledge regarding their process of growing up, particularly, the issues relating to reproductive health.

They need accurate information and do not often know from where to obtain this. Therefore you are expected to educate the community members as well as adolescents about the normal physiological changes with special reference to nutrition and health needs of adolescents. You should educate the adolescents about healthy life style and behaviours among them.

## 8. Key points

1. Adolescents need extra food as they are growing very fast.
2. Adolescents are more likely to become anaemic due to rapid growth in muscle mass (and menstruation in girls) Give them more iron rich foods like whole pulses, green vegetables, jaggery, meat, poultry, fish etc. and treat with IFA tablet; if they are anaemic
3. Adolescents are under psychological stress very often, as they are becoming more independent and assertive as part of their growing up. Hence they should be dealt in a more sympathetic and understanding manner by family members, teachers and other adults in the community.
4. Adolescents are undergoing sexual development and they are curious to know about it. They should be encouraged to ask and know about this from parents, health workers and others who can give them correct information. They should be told about the risk of unprotected sexual behavior i.e. disease like STDs and AIDS.
5. Adolescents may not have adequate information about consequences of experimenting with unprotected sex, use of dangerous substances like drugs and alcohol, risky driving, smoking etc.
6. Adolescents have the right to information and knowledge about their development healthy behaviour sensitive sexual issues their own health needs etc.
7. Unprotected sexual relations increases the risk of unwanted pregnancy, induced abortion and STDs.
8. A pregnant adolescent below the age of 18 years is 2.5 times is at risk and more likely to die than a pregnant woman between 18-25 years.
9. STDs are major cause of reproductive health complications and their sequel including infertility.



10. Lack of knowledge, lack of access to contraception and hesitation in seeking information from adults puts the adolescents at high risk of unwanted pregnancy and STDs.
11. All efforts at counselling adolescents should advocate that premature, unprotected sexual relation and pregnancy in adolescence be avoided.

### **Self assessment questions**

1. What do you mean by adolescence?
2. The onset of adolescence, (Tick one of them)
  - (a) Starts earlier in boys
  - (b) Starts earlier in girls
  - (c) Starts at the same age for both boy and girls
3. The health problem during adolescence is due to; (Tick one of them)
  - (a) The health problem starting at childhood.
  - (b) Due to behavioral disorders during adolescence.
  - (c) Due to sexual behaviour during adolescence.
  - (d) All of the above.
4. The physical sign of adolescence in boys is (Tick one of them)
  - (a) Development of pubic hair
  - (b) Penile development
  - (c) Testicular enlargement
  - (d) All of the above.
5. The physical sign of adolescence in girls; (Tick one of them)
  - (a) Development of pubic hair
  - (b) Development of breast budding
  - (c) Menarche
  - (d) All of the above
6. Vitamin deficiencies quite common during adolescence
  - (a) True
  - (b) False
7. Name some common psychological problems during adolescence
  - (a)
  - (b)
  - (c)
  - (d)
8. Why adolescents develop habit of tobacco, alcohol and drugs?
9. What are needs of education on sex and sexuality?















